FIRE ENGINEERING

OHIO STATE UNIVERSITY
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The Journal of the Fire Protection Profession Since 1877

JANUARY, 1956

To mark Fire Prevention Week, evacuation drill was staged in Tokyo's Daimaru Department Store. See page 81

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Los Angeles County Dedicates Training Center

Contests Prove Effective in Developing Speed in Fire Control

Closed Vs Open Fire Apparatus

TH 311
F43
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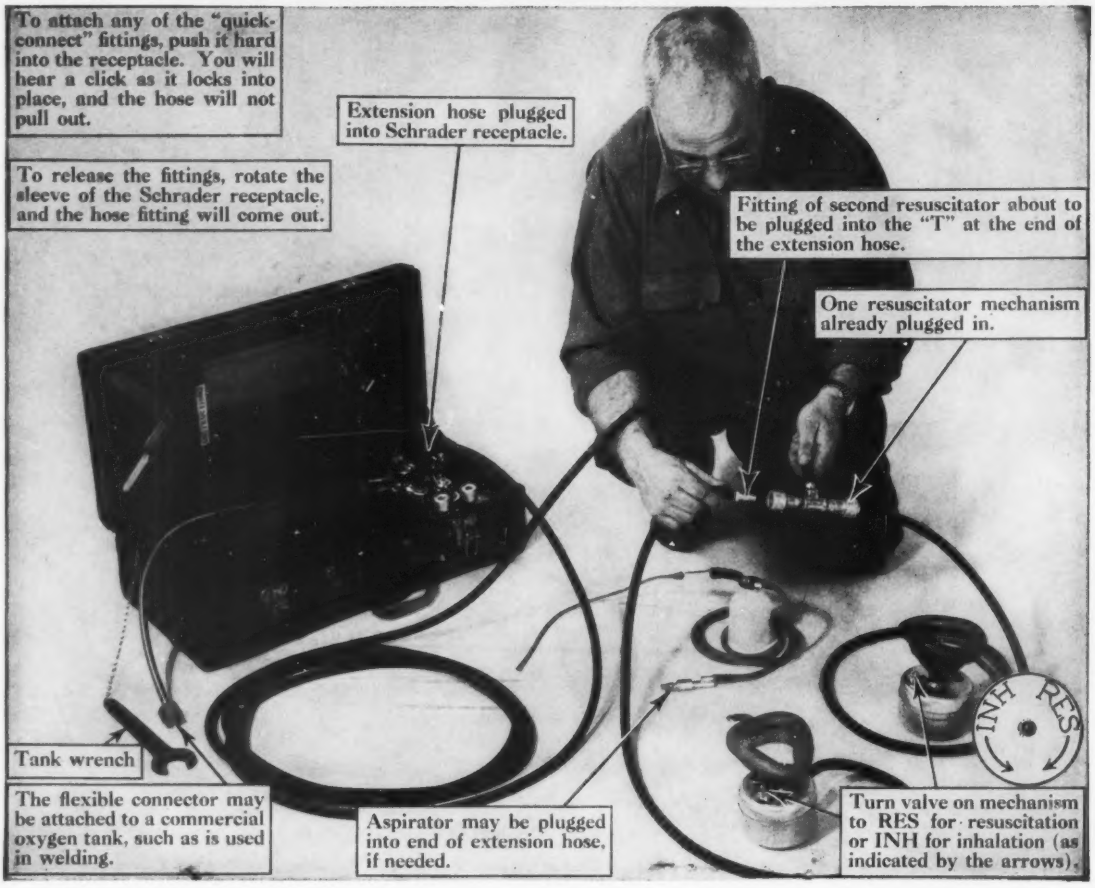
Emerson Life-Line


To attach any of the "quick-connect" fittings, push it hard into the receptacle. You will hear a click as it locks into place, and the hose will not pull out.
Extension hose plugged into Schrader receptacle.
To release the fittings, rotate the sleeve of the Schrader receptacle, and the hose fitting will come out.
Fitting of second resuscitator about to be plugged into the "T" at the end of the extension hose.
One resuscitator mechanism already plugged in.
INH
RES
Tank wrench
The flexible connector may be attached to a commercial oxygen tank, such as is used in welding.
Aspirator may be plugged into end of extension hose, if needed.
Turn valve on mechanism to RES for resuscitation or INH for inhalation (as indicated by the arrows).

From free booklet on resuscitation "Know Your Emerson". A special Navy model is shown.

In resuscitation speed saves lives.

Sometimes the person who needs your help is hard to reach . . . down a steep embankment . . . up on a roof . . . trapped under an overturned vehicle. As quickly as you can get to the victim's face with one hand, your **extension hose** can bring him the breath of life.

Sections of the Emerson "life-line" join instantly, as you push the fitting of one into the quick-connect receptacle of the other. You bring the small resuscitator mechanism in your hand and leave the bulky oxygen tanks behind. Hundreds of feet behind, if you choose.

You can do it at very little expense, if you have a dual Emerson. All you need is extension hoses (50 feet for $20) and an extra aspirator ($10) to give your resuscitator this added "fourth dimension" of speed to inaccessible places.

Write us for full details.

J. H. EMERSON COMPANY

22 COTTAGE PARK AVENUE, CAMBRIDGE 40, MASSACHUSETTS, U. S. A.

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SUPERIORITY

This truck is a model 85-QD, Ward La France Quadruple Combination Fire Apparatus, delivered by Richard M. Parkhurst of Dunellen, N. J. 750 g.p.m., 2-stage centrifugal pump, 240' of assorted ground ladders, accessories and equipment. A FEDERAL Propello-Ray light on the top center "V" of the windshield, 2 FEDERAL Scatter Ray lights on the rear stanchions and a FEDERAL model Q2A Coaster Siren on a front stanchion give this truck audible and visual warning "all the way around."

Imitation is the most certain proof of superiority! The time and energy others put into imitating FEDERAL, FEDERAL puts into product research and improvement.

FEDERAL is the leader!

For proof, notice the overwhelming percentage of FEDERAL Beacon Ray lights and FEDERAL Coaster Sirens used as standard equipment on the superior fire apparatus in the pictures in the magazines.

This doesn't just "happen" — an overwhelming preference doesn't develop overnight — it builds gradually from years of high quality production backed by years of dependable, co-operative service.

If you are in doubt, do as so many others do, those who know — Specify FEDERAL!

FEDERAL manufactures a complete line of emergency vehicle warning signals.

T.M.

FEDERAL SIGN and SIGNAL Corporation

8702 S. State St., Chicago 19, Ill.

FIRE ENGINEERING

VOL. 109 JANUARY, 1956 NO. 1

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How Do You Like It?

Last month we suggested you watch for important changes in FIRE ENGINEERING, which were in prospect, —the better to serve its great and growing family of readers and advertisers.

With this January, 1956 issue, we bring to you the first of these improvements,—a new dress, new style, new treatment of text and pictures.

We hope you like it. We believe the new FIRE ENGINEERING loses none of those inherent qualities which have endeared it to so many, for so long. There is an old saying that "rare wine from a tin cup loses its flavor." In this day of typographical and pictorial artistry there is no excuse for a publisher of even the most technical and factual journal not presenting its messages in a form that is both pleasing to the eye as well as to the mind.

There will be other and nonetheless important improvements in FIRE ENGINEERING—important to us, the publishers, because they are important to you and the other students of the art, profession, science, and business of fire protection and prevention.

The Publishers

FIRE ENGINEERING—A CONSOLIDATION OF FIRE AND WATER ENGINEERING, THE FIRE ENGINEER, FIRE PROTECTION AND FIRE SERVICE

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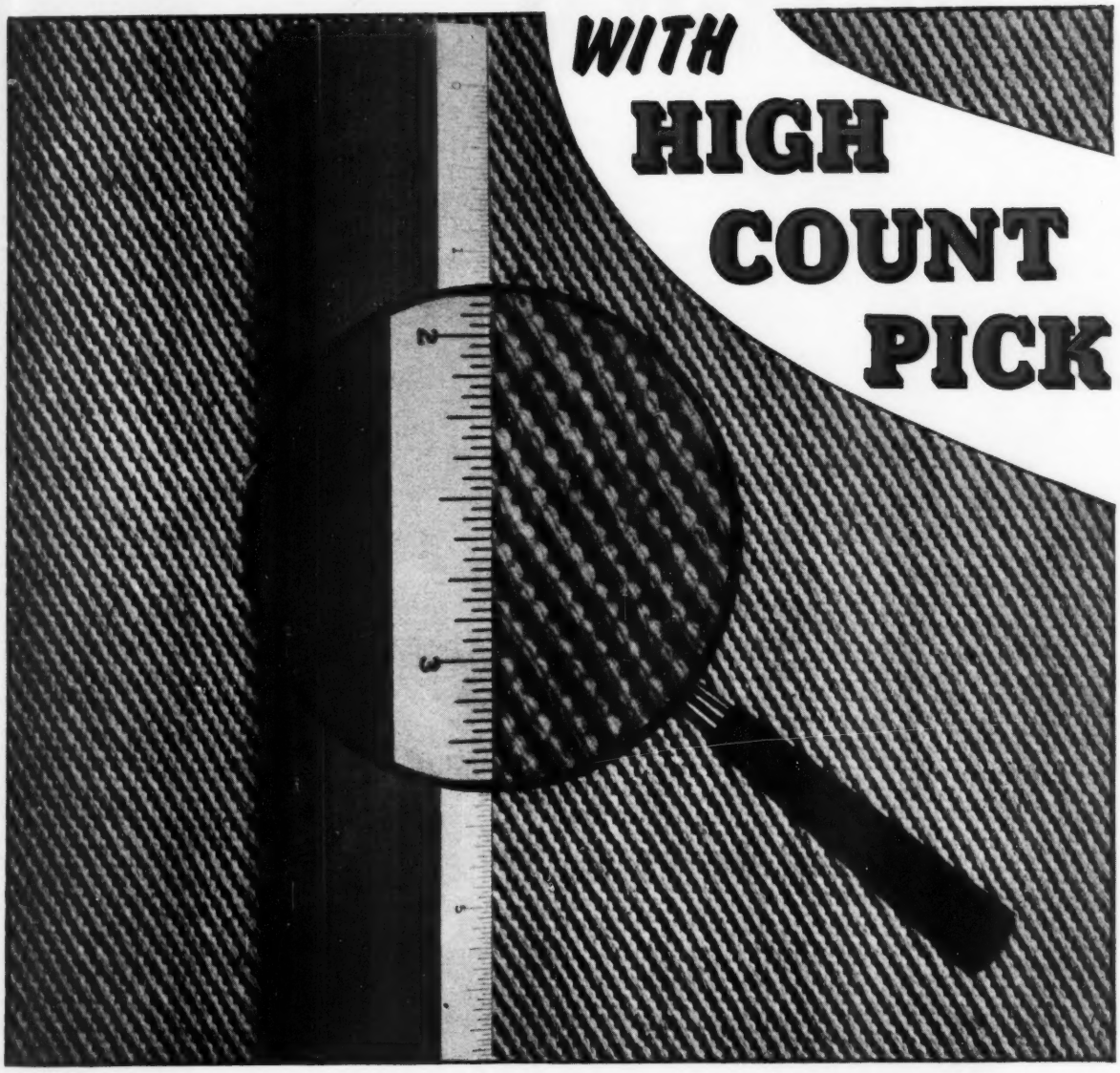
FABRILON

WITH HIGH COUNT PICK



"Pick" **is the number per inch of filler strands, or those which go *around* the hose. FABRILON has the remarkably high pick count of 12 to 14 per inch. In FABRILON, high pick count means *closely woven twill jackets* which *resist abrasion and snagging* and slide over obstacles with *minimum surface friction.* It also means *smooth texture, ease of handling, high burst* and resistance to *pressure shock* or *water hammer.***

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SO MUCH PUMPER . . .

FOR SO LITTLE MONEY!

The equipment your department has must be the most dependable fire fighter made today. Your community demands it!

Boardman meets this challenge with a pumper that is designed for years of trouble-free, dependable service. This dependability is proven by the hundreds of departments now operating Boardman equipment from coast to coast, and beyond.

And Boardman pumpers are economical because they are built around the standard chassis of your choice. Here is low initial cost, coupled with economy of operation and maintenance.

Write TODAY for free literature and the amazingly low price.

THE BOARDMAN CO.
OKLAHOMA CITY
1401 S.W. 11TH
BRANCH OFFICE: TULSA, OKLAHOMA

A few choice dealer territories available!

New B. F. Goodrich Superseal treatment protects fire hose against mildew attack, rotting and freezing

MILDEW ruins fire hose by causing weak spots that burst under pressure.

Now B. F. Goodrich engineers, who were first to make fire hose light and flexible, have come up with a new chemical treatment—called Superseal—that gives maximum protection against mildew, rotting, moisture absorption and freezing.

The new treatment is not just a surface application. The chemical solution penetrates and protects every cord in both the inner and outer jackets, prepares the hose for all sorts of weather.

Tests show that hose treated by this new B. F. Goodrich method has 10 times better mildew resistance than other treated hose. To prove this, three lengths of hose were buried in a plot of ground that had been infested with mildew spores, maggots and microbes. After 8 weeks, the untreated hose was reduced to powder. The hose treated the old way wasn't much better. But the B. F. Goodrich treated hose looked good as new, still had 96% of its original strength.

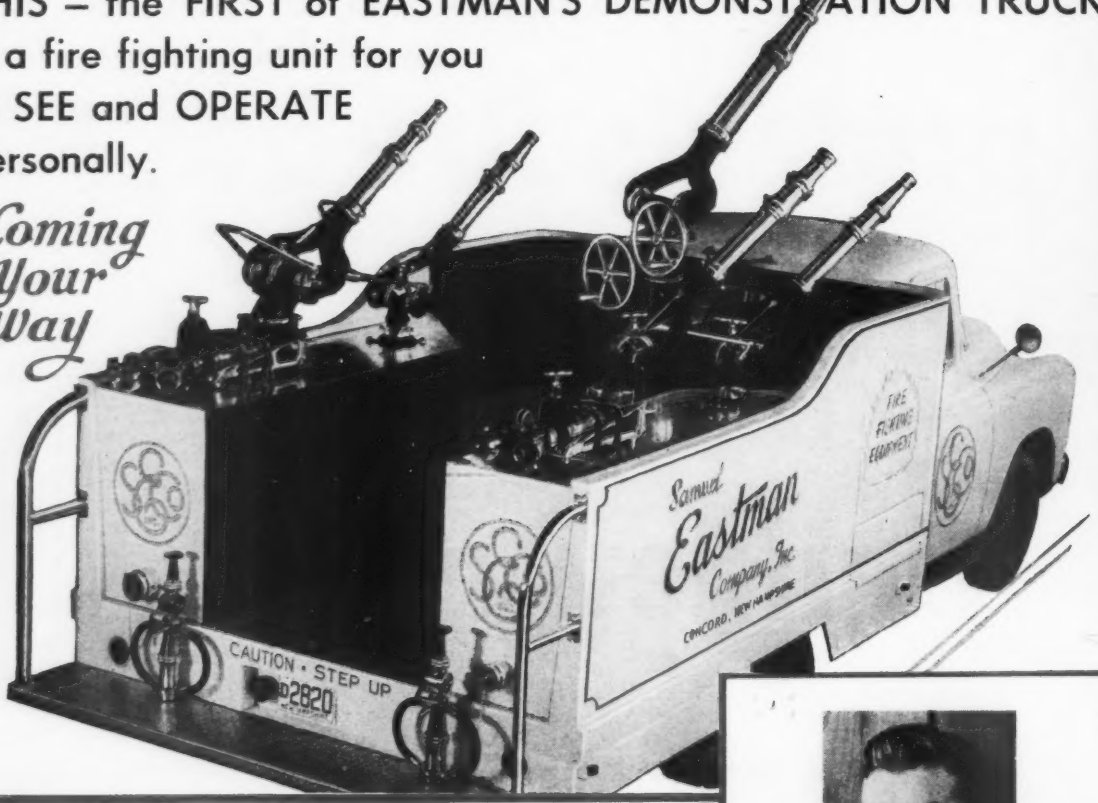
Next time you need fire hose, order it from your B. F. Goodrich fire hose distributor—and specify Superseal. It costs no more than ordinary treatments. *The B. F. Goodrich Company, Dept. M-538, Akron 18, Ohio.*

B.F. Goodrich
INDUSTRIAL PRODUCTS DIVISION

FIRST in "56
Eastman DELUGE GUNS

THIS – the FIRST of EASTMAN'S DEMONSTRATION TRUCKS is a fire fighting unit for you to SEE and OPERATE personally.

Coming Your Way



Chief:

We want you to handle and operate EASTMAN Deluge Guns on your own home grounds. This will give you the opportunity to see what EASTMAN equipment can do for your fire fighting problems.

SAMUEL EASTMAN CO., INC.

EASTMAN DELUGE GUNS AND PLAYPIPES — FIRE DEPARTMENT SUPPLIES

CONCORD, NEW HAMPSHIRE

Introducing

BOB FITZ

Bob is our factory representative. He will bring this demonstration truck to you and will be ready to answer your questions regarding EASTMAN fire fighting equipment.

Mrs. Louise Bane holds her twins, Billy (right) and Wendy (left). Fire Chief Masie is at the right, Assistant Chief Jones at left.

The Rescue of Wendy Bane

Two-month-old Wendy Bane, a twin, was limp and unconscious when the family physician and firemen from the Rennerdale, Pa., Volunteer department hurried into the house. Her respiration had been blocked as the result of a choking spell.

The physician's examination detected no heart beat. He motioned to Fire Chief Jim Masie and Assistant Chief Herb Jones. They quickly strapped the facepiece of a Pneolator over Wendy's nose and mouth. All watched her intently as the instrument fed life-giving oxygen into her tiny lungs. Seconds passed.

Then the physician moved his stethoscope over Wendy's chest again. He looked up. His relieved face told that the heart beat had started. A few hours in the hospital completed the cure. Wendy was taken home.

This was the first emergency case for Rennerdale's Pneolator since the unit was donated to the department by the Woman's Auxiliary. Wendy's mother, Louise, a registered nurse, really means it when she says: "I'll love those ladies the rest of my life."

MINE SAFETY APPLIANCES COMPANY

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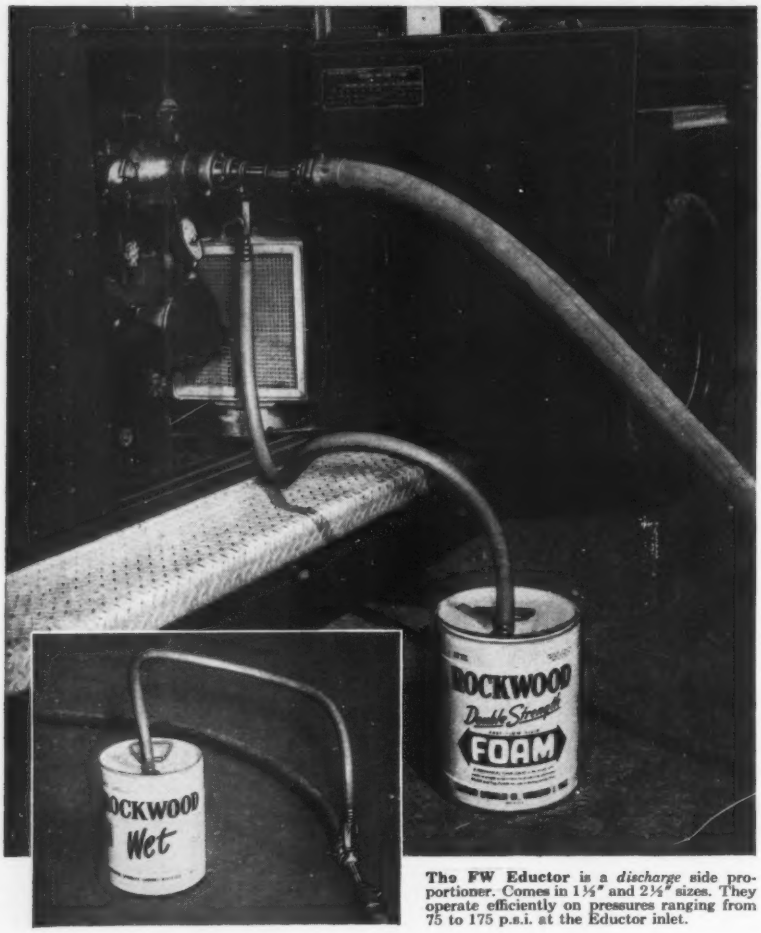
THE M·S·A PNEOLATOR

Automatic artificial respiration device that intermittently inflates lungs to a pre-determined pressure, then cuts off to permit exhalation by natural recoil of chest and diaphragm. Regulator compensates for age and physical condition of patient. Includes facepieces in two sizes—for adult and child. Portable, rugged, dependable. Write for details.

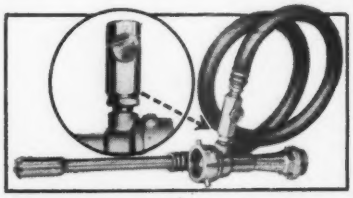


The FW Eductor is a *discharge* side proportioner. Comes in 1½" and 2½" sizes. They operate efficiently on pressures ranging from 75 to 175 p.s.i. at the Eductor inlet.

FFF Nozzle comes with Foam screen and solid Foam stream shaper.

SG-60 Nozzle with FF extension unit.

Rockwood Eductors are designed for use with both the Rockwood FFF nozzle and the SG-60 nozzle with FF extension unit. SG-60 is an all-purpose nozzle that fights fires 5 ways — high velocity WaterFOG, low velocity WaterFOG (with applicator), FogFOAM, solid stream of water or of FOAM, FF extension unit discharges Rockwood FOAM in a solid stream or as FogFOAM, and covers large areas at one time.



The Variable FW Metering-Check Valve on the Rockwood Eductor is highly versatile, and is furnished with each FW Eductor. It incorporates both the Metering Valve and Ball Check Valve in one unit, and meters liquid into the hose line in any proportion from 1% through 6%.

Two for the road!

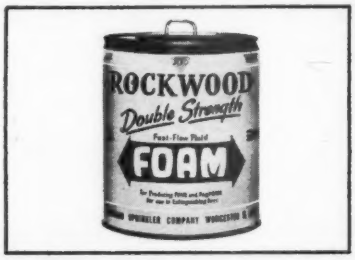
Protect against flammable liquid fire due to tank truck accidents

With more traffic on congested highways, more filling stations, more and more gasoline tank trucks in daily service, *your* municipality is in greater danger of a flammable fuel fire than it has ever been before. A sudden crash of a tank truck passing through your city streets tomorrow could confront you with a difficult-to-control flammable liquid fire.

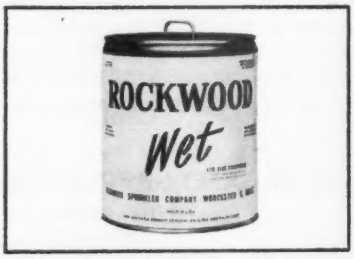
The use of Rockwood FW Eductor reduces the danger of disastrous losses due to such a fast-spreading fire. Developed for operation with Rockwood's FFF nozzle and SG-60 nozzle with FF extension unit, the FW Eductor introduces Rockwood regular 6% FOAM liquid, Double-Strength 3% FOAM liquid or WET (1% or 2%) into the hose line, quickly controlling and extinguishing flammable liquid and other fires.

Rockwood FW Eductor is the simplest form of proportioning you can buy. Ideal for municipal fire departments, oil refineries and industrial plants, it can be attached between discharge gate of a fire truck and hose line, or between hydrant and hose line, or between two lengths of hose.

Be prepared. Put this great fire fighter to work for you. Specify Rockwood FW Eductor when you order a fire truck.



Rockwood Double-Strength Foam Liquid, 3 parts mixed with 97 parts water, forms a solid FOAM blanket that quickly re-seals itself. Available in 5-gallon or 50-gallon drums.



Rockwood WET, 1 part mixed with 99 parts water, increases penetration and extinguishing action of water. Excellent for deep seated fires or where water is scarce. Can be used in proportions of 1% or 2% by volume for Class A and B fires. Available in 5-gallon cans or 50-gallon drums.

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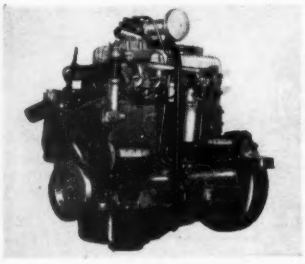

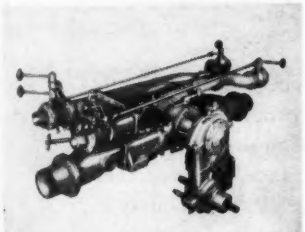

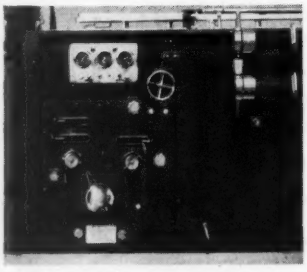

Start with 50 years of experience with the fire-fighting services. Add the most complete production facilities, the highest standards of manufacture in the entire industry. Back these up with "look-ahead" features that could come only from Mack, and you'll understand why these new Macks are earning the reputation of being the finest fire fighters ever made.

NEW HIGH-STRENGTH CHASSIS. Completely re-designed for maximum structural stability, safety, and rugged shock resistance.

NEW POWER. King-sized, overhead valve Mack Thermodyne® engines provide power for the most demanding fire-fighter service.

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ADVANCED CENTRIFUGAL PUMPS. Built in 2- and 3-stage types, with capacities ranging from 500 to 1250 gpm. Automatic pressure control holds desired pump pressure constant, regardless of number of lines used.

READY AVAILABILITY OF REPLACEMENT PARTS. Mack is the only fire apparatus maker offering complete nationwide parts service.

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COMPLETE LINE OF PUMPERS—500 TO 1250 GPM ... SQUAD AND HOSE WAGONS ... 65', 75' AND 85' AERIALS ... COMBINATION LADDER TRUCKS

2-WAY RADIO BLANKETS WAYNE COUNTY

Radio-Controlled Mutual Aid Has Improved County-Wide Fire Protection

● Chief John Stephan coordinates county-wide fire fighting at mobile headquarters in Lyons, New York.

● Volunteers at Palmyra, New York call direct from the fire scene for assistance from nearby town.

2-WAY MOBILE RADIO

FREQUENCY STABILITY & SELECTIVITY *guaranteed for life!*

Here is a situation where 27 volunteer fire departments banded together under one G-E mobile radio system. The result? Every town in their 607-square mile area enjoys vastly-improved fire protection. For emergency and routine calls . . . for civil defense drills . . . General Electric 2-way radio is the communication channel that coordinates all activities. It saves minutes, miles, and operating money in dispatching rolling apparatus to the scene of action . . . wherever it may be.

G-E mobile radio was selected after comparing routine and emergency performance standards on all makes. Because of low initial cost and bedrock maintenance, G-E won the bid. You can duplicate Wayne County's success with volunteer groups in *your* county. Contact Chief Stephan for a firsthand report that proves G-E is your best buy! Or, write us direct: *General Electric Company, Section X5916, Communications Equipment, Electronics Park, Syracuse, New York.*

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GENERAL ELECTRIC

WIDELY IMITATED!

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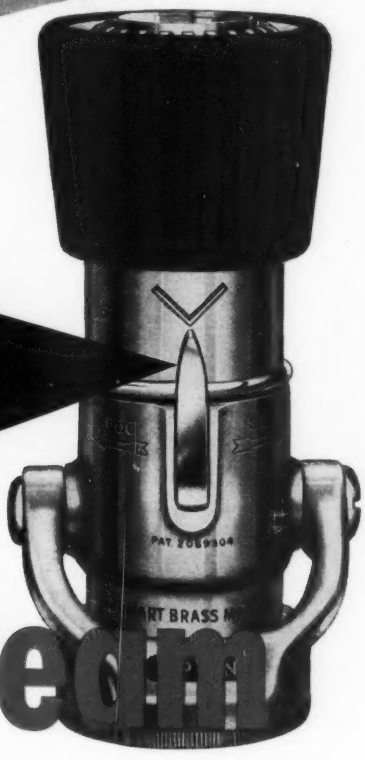
THE BEST!



Select-O-Stream

MYSTERY NOZZLE

Developed in 1952... an immediate success, SELECT-O-STREAM proved to be one of the greatest *original* developments in Elkhart's long list of fire fighting "firsts." It's a great compliment to be copied. It's stimulating to know YOU'RE RIGHT and YOU'RE FIRST. Admirably referred to as SOS, Select-O-Stream has been one of the most talked of nozzles in the history of fire fighting. Accept this sincere request: TRY, TEST, COMPARE Select-O-Stream. YOU DECIDE!

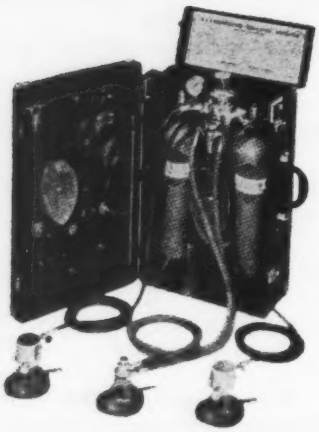
★
Set to any stream without looking. You feel those embossed stream indicators.
★
Set to turn on in any position.
★
Locks to the stream you choose.
★
Separate ball type shut-off. (Brass to neoprene seat)
★
Improved grip serves as both grip and bumper.
★
Teeth that chew the fog stream. (When you set the nozzle to fog these teeth go to work.)
★
Solid knurled base—easily attached.
★
NOW AVAILABLE IN THESE SIZES: 1"—1½"—2½".

Write for complete literature

ELKHART BRASS MFG. CO., INC.
ELKHART, INDIANA
Past half a century of fire fighting progress

SQUEEZES PAST OBSTRUCTIONS

E & J RESUSCITATOR - INHALATOR - ASPIRATOR



E & J RESUSCITATOR • ASPIRATOR • INHALATOR
. . . first name in Resuscitators

ACCEPTED COUNCIL ON PHYSICAL MEDICINE and REHABILITATION AMERICAN MEDICAL ASSOCIATION

When partial obstructions will not yield to aspiration, or when the air passages are swollen almost shut, the exclusive E & J feature "Precision Flow Control" assumes life-saving importance in emergency rescue treatment.
With it the operator can quickly find just the exact flow of oxygen that will squeeze past obstructions short of complete blockage to provide full inhalation and exhalation at a *slow but life-saving rate!*

FIND OUT MORE ABOUT THIS VITAL E & J FEATURE . . .
Data and demonstration without obligation.
Write to Dept. 544-7 at address below.

E&J

E & J MANUFACTURING COMPANY

100 E. Graham Place, Burbank, California

WARD LaFRANCE TRUCKS SERVE IN EMERGENCY

Answering the urgent appeal of Connecticut's Governor Abraham Ribicoff for hurricane help, New York City's fire department responded with the loan of 35 Ward LaFrance units to help restore light, heat, power and communications in Danbury, Conn.

These trucks pumped water from basements of public buildings, stores, railroad stations and private homes . . . contributing greatly to the restoration of community services.

This is typical of the high performance that Ward LaFrance trucks render every day, one of the many reasons so many communities rely on Ward LaFrance equipment for dependable protection.

PHOTO BY NEW YORK DAILY NEWS

WARD LaFRANCE TRUCK CORPORATION • Elmira, N. Y.

Fire Apparatus Manufacturers For Over 37 Years

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MIDWESTERN

Safety Clothing for FIREMEN

The Original

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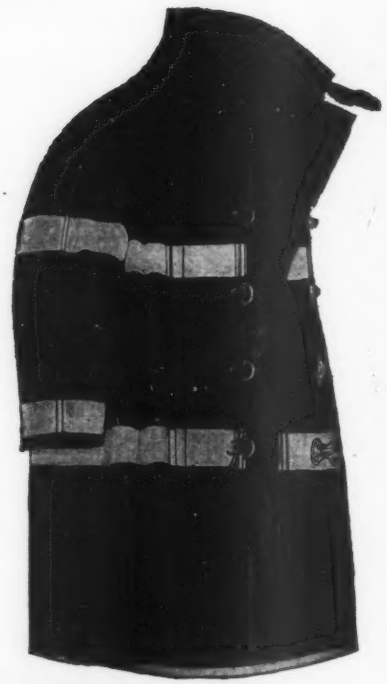
- **Greater Visibility**
- **Exclusive Safety Features**
- **Exclusive Fabric Material**
- **Superior Design**



The striped safety coat for firemen is an *original* MIDWESTERN development . . . featuring highly visible yellow stripes which are *rubberized as part of the material* . . . not painted, glued or sewed on!

Service records prove that Midwestern Striped Safety Coats withstand years of rugged duty . . . offer high safety visibility during the entire life of the garment. Designed exclusively for firemen . . . every detail in construction adds to the service, comfort, protection and long wear of the garment.

As an accident prevention measure, more and more fire departments are specifying Midwestern Striped Safety Coats as standard equipment. There are many imitations but *no substitute* for the workmanship, built-in comfort and longer wear you receive by specifying MIDWESTERN.

MIDWESTERN COMBINATION SAFETY SUIT

The Midwestern Safety Coat and Bunker Pants combination is preferred by many larger municipal departments. Detachable wool linings. Close fitting collar and elastic inner sleeve on coat keep out sparks and water. Pants have double-stitched seams, reinforcing rivets at points of strain, large, roomy pocket space.

QUALITY UNEXCELLED

In our Vast selection of materials you will find the type of fabric exactly suited to your climate and needs. For complete information, have your Midwestern dealer show you our complete line. A letter to the factory will also bring you literature and material samples for your inspection.

NONE GENUINE WITHOUT THIS TRADE MARK

MIDWESTERN SAFETY MFG. CO. Mackinaw, Illinois

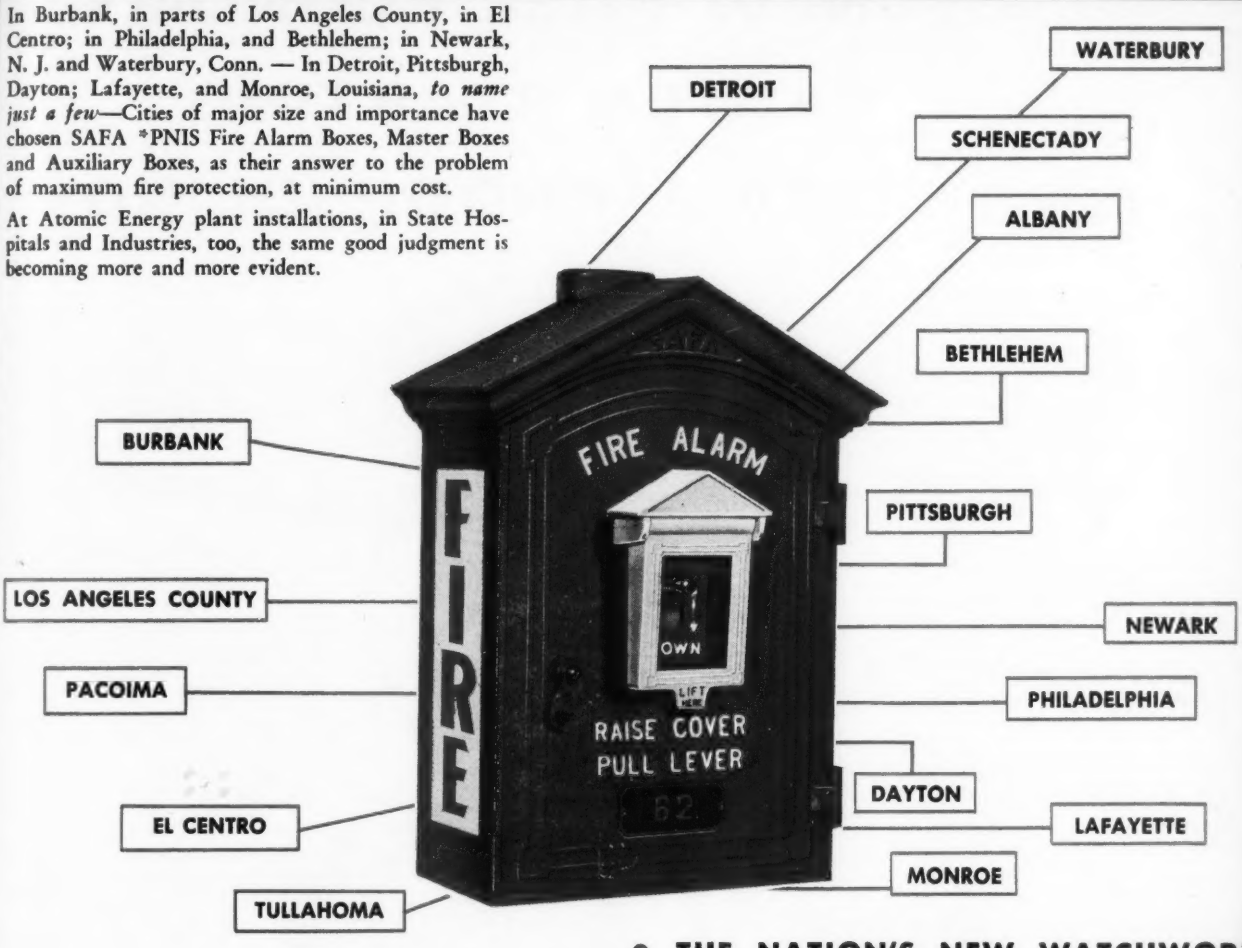
Manufacturers of the Famous **MACKINAW Safety Coats**

FROM COAST TO COAST, NORTH TO SOUTH, AND POINTS IN BETWEEN

— THE TREND IS TO SAFA *PNIS FIRE ALARM BOXES

In Burbank, in parts of Los Angeles County, in El Centro; in Philadelphia, and Bethlehem; in Newark, N. J. and Waterbury, Conn. — In Detroit, Pittsburgh, Dayton; Lafayette, and Monroe, Louisiana, *to name just a few*—Cities of major size and importance have chosen SAFA *PNIS Fire Alarm Boxes, Master Boxes and Auxiliary Boxes, as their answer to the problem of maximum fire protection, at minimum cost.

At Atomic Energy plant installations, in State Hospitals and Industries, too, the same good judgment is becoming more and more evident.



• THE NATION'S NEW WATCHWORD FOR QUALITY, DEPENDABILITY AND SAFETY IN MODERN FIRE ALARM BOXES

SAFA Series 1400 *PNIS fire alarm boxes unerringly signal the need for help in what is indisputably the quickest, surest way to bring fire fighting apparatus into effective action. In the most extreme emergencies the SAFA box stands visibly ready for quick one-hand, single-motion operation. Catastrophe alone can prevent its clear, ungarbled signal from getting through. Neither broken nor grounded circuit interferes. Even interruption by actuation of another box at or about the same time is positively controlled, so that only one clear signal at a time will do its all-important job of registering and locating the danger.

The new design in SAFA's Series 1400 fire alarm box incorporates a low-cost maintenance feature which deserves special consideration: The outer shell of the box now connects securely to a sturdy back plate, from which it can be easily removed for repainting away from location, rather than on location. A spare outer shell is merely substituted, without having to disconnect either conduit or ground wires. Better access to the box-movement is also achieved through this newly developed assembly-feature.

*Positive, Non-Interfering, Succession Type.

Write for detailed information, and the good news about cost.

SAFA ALARM DIVISION, THE *Fyr-Fyter* COMPANY

Executive Offices: Orrville, Ohio

SALES OFFICES — NEW YORK: 2 West 46th Street — NEW ORLEANS: 635 Baronne Street — PASADENA: 740 S. Oak Knoll

NOW...30 HP!

NEW FUEL ECONOMY

FASTER STARTING

STALL-PROOF IDLING

NEW SEA-HORSE 30

NINE GREAT MOTORS

*JAVELIN	30 hp	$582.00
*SEA-HORSE 30	30 hp	552.00
SEA-HORSE 30	30 hp	462.00
*SEA-HORSE 15	15 hp	452.00
SEA-HORSE 15	15 hp	362.00
SEA-HORSE 10	10 hp	321.00
SEA-HORSE 7½	7½ hp	241.00
SEA-HORSE 5½	5½ hp	216.00
SEA-HORSE 3	3 hp	146.00

Electric Starting... Prices f.o.b. factory, subject to change... OBC certified brake hp at 4000 rpm (30's at 4500 rpm).

FOR 1956: Johnson presents NINE Sea-Horses . . . 3 to 30 hp! Featuring new fuel economy. Quicker, smoother starting than ever before. New Stall-Proof Idling. Electric and manual starting. Remote Control fittings for steering, shift, and throttle. *And traditional Johnson DEPENDABILITY.* All models are beautifully styled in Johnson's new Holiday Bronze and Spray White.

FREE! The new Sea-Horse Catalog gives the full story on all that's new for '56. New models, new features. New power and load-carrying ability. Write . . .

JOHNSON MOTORS, 7000 Pershing Road, Waukegan, Illinois
A DIVISION OF OUTBOARD, MARINE & MANUFACTURING COMPANY
In Canada: Manufactured by Johnson Motors, Peterborough

Johnson SEA-HORSES FOR DEPENDABILITY

ALL JOHNSON SEA-HORSES ARE PROTECTED AGAINST SALT WATER CORROSION—NO FLUSHING NECESSARY

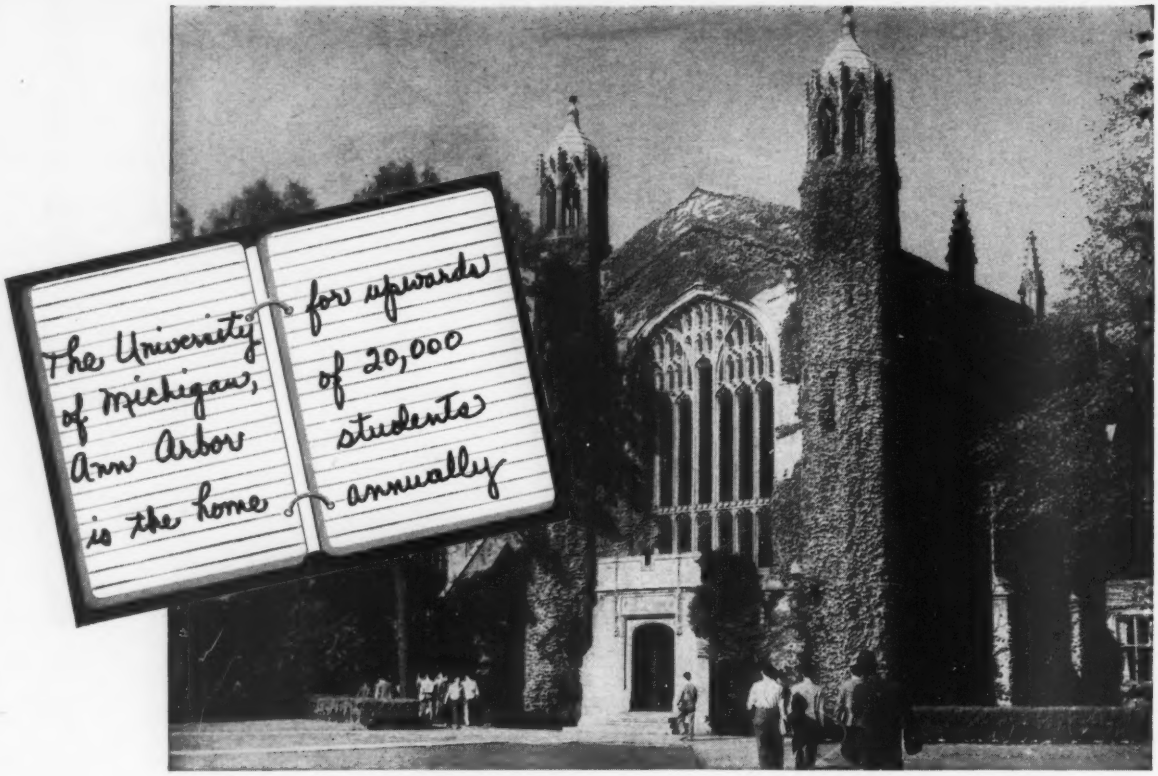
FOR FIREFIGHTING OR BOOSTER SERVICE the highly portable, light-weight Marlow Fire Pump can be quickly moved to a fire or water source that a pumper can't reach. For fire-fighting, the unit boosts hydrant pressure or pumps from any pond, or shallow well. Small departments can dispatch it to dreaded second fires. For booster service the pump can be carried by two men to inaccessible water sources. The pump pushes water up hills or over long distances to supply pumpers or tank trucks.

marlows are portable

The Marlow Fire Pump, weighing only 160 pounds ready to operate, *can be placed in service 30 seconds after starting!* Powered with an 8½ hp. engine, the unit runs unattended and delivers up to 100 g.p.m. at 80 p.s.i. It can be stored in pumper compartments or car trunks. Meets recommendations of National Fire Protection Association and performance exceeds minimum requirements. For details, see your Marlow dealer or write for Bulletin F-04.

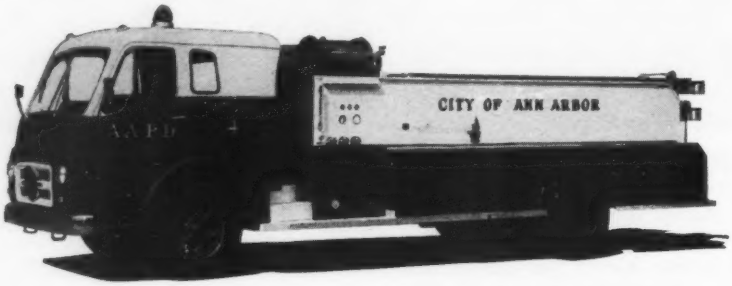
MARLOW PUMPS • RIDGEWOOD, NEW JERSEY

DIVISION OF BELL & GOSSETT COMPANY • *Branch Factories: Longview, Texas • Morton Grove, Illinois*



a progressive city protects a great university

with JOHN-BEAN *HIGH-PRESSURE FOG FIRE-FIGHTERS*



Today one of the five largest universities in the nation, Michigan, is distinguished for the excellence of both its faculty and its physical facilities. The 700 acre campus with approximately 90 major buildings make Ann Arbor a "university town".

Situated on the perimeter of one of the world's great industrial centers, more than 50 firms comprise the industrial family in Ann Arbor. Recognizing the ever increasing need for better fire-fighting protection, this progressive city has selected the finest — another John BEAN High-Pressure Fog Fire Truck.

When every second counts most, the John BEAN High-Pressure Fog System makes fast acting, easily controlled fog streams instantly available for triple fire-killing action.

1. It cools. 2. It isolates. 3. It smothers.

The John Bean Engineered Ladder Truck shown above is the third John Bean Fire Truck in use protecting this city.

It is designed as a multiple purpose, hard hitting combination unit featuring — high-pressure fog, 186' of ladders, rescue equipment, two-way radio and salvage appliances.

You, too, can give your community the best fire-fighting protection. Get complete details. Write for catalog today.

JOHN fmc® BEAN

ORIGINAL HIGH-PRESSURE FOG FIRE-FIGHTER

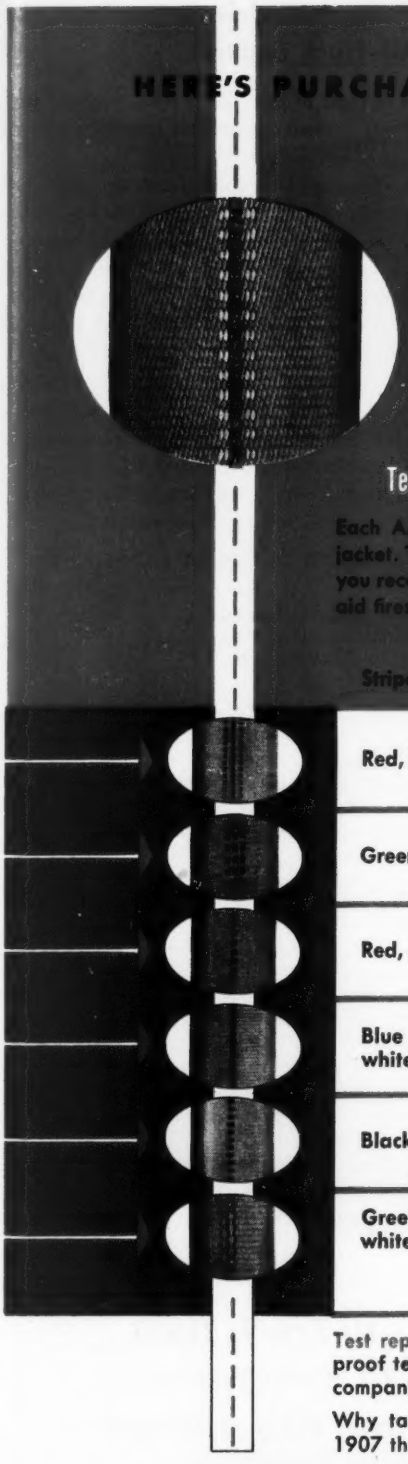
John Bean Division, Lansing 4, Michigan
John Bean Division, San Jose, California

Can be mounted on most standard truck chassis.

A PRODUCT OF FOOD MACHINERY AND CHEMICAL CORPORATION

HERE'S PURCHASING PROTECTION FOR YOU...

AMERICAN'S IDENTIFYING STRIPE



Tells you instantly what brand and construction you're getting!

Each AMERICAN brand fire hose has its own identifying stripe woven into the jacket. The pattern and colors of this stripe enable you to tell immediately whether you receive the hose you order... also enable you to identify your hose at mutual-aid fires. Here's what these stripes tell you—

Stripe Pattern	AMERICAN Brand	Construction
Red, blue, red	American Heavy-Duty High Test	Heavy-duty cotton-synthetic jacket
Green, red, green	American Medium-Weight High Test	Medium-weight cotton-synthetic jacket
Red, green, red	American Light-weight Extra Flexible	Lightweight cotton-synthetic jacket
Blue & red with white	Crackerjack	Heavy-duty cotton jacket
Black, red, black	Municipal	Medium-weight cotton jacket
Green & red with white	Tiger	Lightweight cotton jacket

Or your own special identifying stripe can be woven into any AMERICAN hose you order

Test report, too—Each 50-foot length of AMERICAN Municipal fire hose is factory proof tested, with couplings on, for burst strength, stretch and twist. Test report accompanies each shipment—further proof that you're getting what you order.

Why take a chance on unidentified warehouse stock? Specify AMERICAN—since 1907 the hose with the helpful identifying stripe and test report.

AR-29

THE American RUBBER MANUFACTURING CO.

Factory & General Offices: • 1145 Park Avenue • Oakland 8, California • Phone OLympic 2-0800

SEATTLE • PORTLAND • SAN FRANCISCO • LOS ANGELES • BOISE • ST. LOUIS • SALT LAKE CITY

For extra fire fighting protection ...choose INTERNATIONAL Trucks

8 Specialized All-Truck Models
9 High Torque All-Truck Engines

If your community is in need of new fire trucks, you can get extra protection when you choose dependable INTERNATIONAL fire truck chassis. **Here's why:**

INTERNATIONAL Trucks give you *specialized* fire fighting units, with *locally-available* parts and service. They are *all-truck built*, with no passenger car engines or components asked to do a fire truck job. They have high horsepower, high torque standard and optional engines that deliver maximum *usable* power where you need it—for fast starts, quick acceleration after turns, full pressure pumping from 300 to 1,500 GPM. They give you extra truck life, extra dependability, save you the BIG money in operation and maintenance.

Whatever your fire protection requirements, INTERNATIONAL Trucks provide the answer in eight specialized chassis—9 engines—many other all-truck models. Ask your INTERNATIONAL Truck Dealer or Branch to give you complete details.

INTERNATIONAL HARVESTER COMPANY • CHICAGO

INTERNATIONAL R-1856 Specialized Fire Truck Chassis, 21,000 lbs. GVW. Front axle rated capacity 5,000 lbs. (7,000 lbs. axle available to give 23,000 lbs. GVW). Rear axle rated capacity 16,000 lbs.

S- and SC-166 (conventional, cab-forward)—131-hp BD-240 or 140-hp BD-264 engine.

S-176—103.5-hp BD-269 or 137-hp BD-282 engine.

S- and SC-186 (conventional, cab-forward)—137-hp BD-282 or 150.4-hp BD-308 engine.

R-1856—165-hp RD-372 or 175-hp RD-406, 182-hp RD-450, 212-hp RD-501 engine.

R-196—165-hp RD-372 or 175-hp RD-406, 182-hp RD-450, 212-hp RD-501 engine.

R-206—175-hp RD-406 or 182-hp RD-450, 212-hp RD-501 engine.

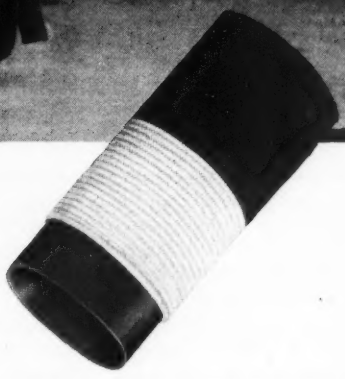
All-Truck Built to save you the BIG money!

INTERNATIONAL® TRUCKS

HEAVY-DUTY SALES LEADERS 24 STRAIGHT YEARS!

Motor Trucks • Crawler Tractors • Industrial Power • McCormick® Farm Equipment and Farmall® Tractors

Here's why this PETROCHEM fire hose is on guard throughout this D-X Sunray refinery



Get acquainted with your Quaker-Quaker Pioneer distributor. You'll find him of real help—not only for your regular needs — but also in emergency situations requiring extra fast supply. Write for free brochure and name of your nearest distributor.

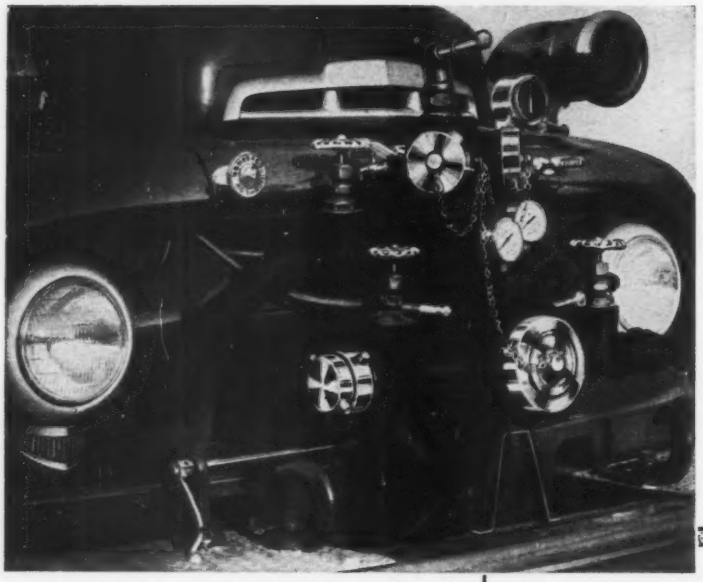
This hose does *more* than fight fire. It fights off deterioration by oil and chemicals, stands up to abrasion, resists weather and functions safely under high pressure. Why? Because its oil-resistant Neoprene tube is enclosed in tough, wear-defying *Du Pont Dacron* impregnated with oil-proof Neoprene . . . this provides a tough, light, flexible hose, resistant to oil, both inside and out. Actually this hose is so strong that it can take pressures up to 500 lbs. and temperatures up to 300°F. . . . and so flexible that you can actually knot it. Easy to store, too! Either coiled or folded it takes little space.

These are some of the reasons why D-X Sunray's Oklahoma refinery has this hose . . . the first made for oil and chemical industries, at all fire stations . . . and why it will pay you to consider it in your safety planning. Complete Quaker-Quaker Pioneer line includes hose for every purpose, belting, packing and moulded rubber for every use.

DIVISION OF HKP H. K. PORTER COMPANY, INC.

H. K. PORTER COMPANY, INC.
QUAKER RUBBER DIVISION
Philadelphia 24, Pa.
QUAKER PIONEER RUBBER DIVISION
San Francisco 7, California

FROST-PROOF DESIGN



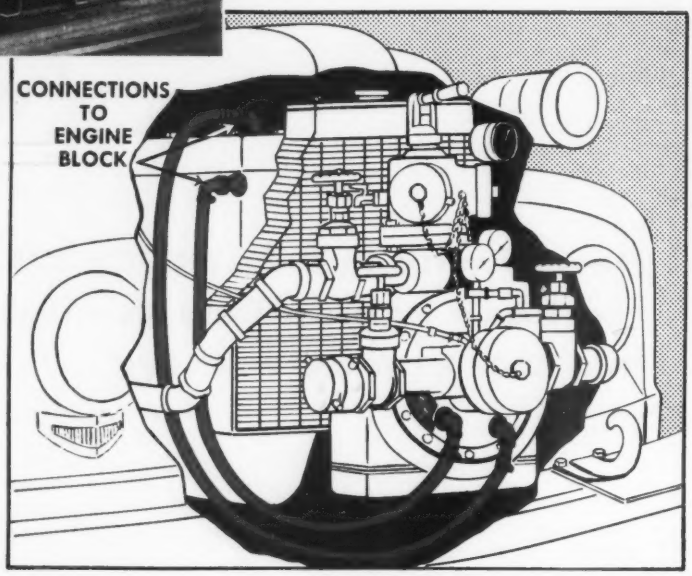
of Barton-American Type UA Front Mounted Fire Pump gives extra safety factor for winter operation

You *never* have to worry about your Barton-American Type UA Pump freezing! For this unique, effective *frost-proof design* gives you positive operation even in the coldest weather!

Water at engine temperature constantly circulates from engine cooling system through the cored suction head of the UA Pump. Even at sub-zero temperatures, this always keeps the pump well above the freezing point.

It's a closed system with no possible loss of radiator water or anti-freeze . . . operating on the same principle as a car heater.

In addition this feature of the UA Pump increases the summer cooling capacity of the system . . . gives you a cooler engine in hot weather as well as positive protection against freezing in cold weather!



Hose line circuit may vary with make of engine.

ONLY THE BARTON-AMERICAN TYPE UA PUMP GIVES YOU *ALL* THESE VALUABLE FEATURES:

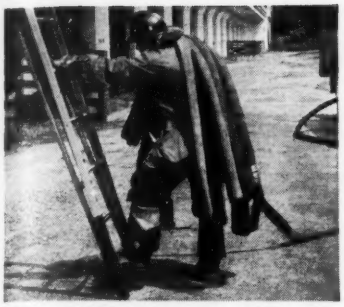
- Is Easy to Install
- Fights Fires on the Move
- Gives Pressures to 400 lbs.
- Better Weight Distribution on Truck
- Gives You Unusual Economy
- Lets You Carry More Water or Equipment
- Effective Frost-Proof Design
- Both Volume and High-Pressure Fog Stream
- Positive Non-Slip Clutch

WRITE TODAY FOR UA PUMP BULLETIN NO. 8330-B

AMERICAN-MARSH PUMPS

BATTLE CREEK MICHIGAN

In Canada:
American-Marsh Pumps (Canada) Ltd., Stratford, Ont.



IN COLUMBUS, O., the stronger hose made with "Dacron" is preferred because it needs less maintenance.

IN MIAMI, FLA., "Dacron" is specified as filler cord because it resists weakening by mildew . . . a real problem in semitropic climates.

IN AUGUSTA, GA., hose made with "Dacron" is used "because it's easier to coil and rack . . . dries faster, too."

SCHENECTADY, N.Y., Fire Department averages two calls per day . . . reports, "Hose made with 'Dacron' gives better all-around performance."

Schenectady Fire Department reports:

"Hose made with DACRON is lightweight...gets into action fast"

REG. U. S. PAT. OFF.

The Schenectady Fire Department uses 5,000 feet of hose made with "Dacron"*. Like other fire chiefs across the country, Chief Edward M. Moffett reports better all-around performance from fire hose made with "Dacron" polyester fiber. Used as the load-carrying "filler" cord that reinforces the hose, this Du Pont fiber permits a hose that's light and flexible—yet *stronger* than ordinary hose of the same construction.

Du Pont makes "Dacron" and supplies the yarn to hose manufacturers. The combination of the unusual properties of "Dacron" plus hose manufacturers' skill has resulted in a superior fire hose. Hose made with "Dacron" is made by all leading fire-hose manufacturers. The next time *you* need hose, be sure it's made with "Dacron". E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware.

*"*Dacron" *is Du Pont's registered trademark for its polyester fiber.*

ADVANTAGES OF FIRE HOSE MADE WITH "DACRON":

- Lighter
- Stronger
- Dries faster
- More flexible
- Cuts loading time
- Saves space

For Better All-Around Performance Specify Hose Made with "Dacron"

POLYESTER FIBER

DU PONT

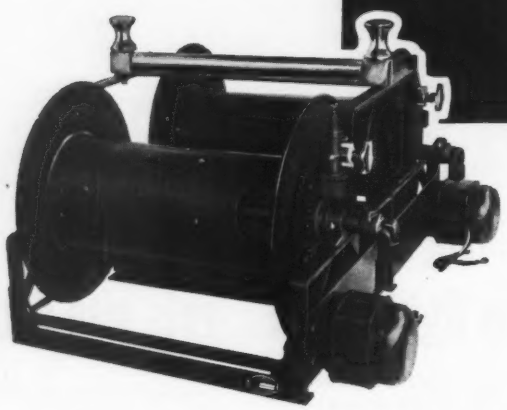
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

When you want the best, SPECIFY...

HANNAY FIRE HOSE REELS... HANNAY FIRE HOSE REELS...

HANNAY



Built *by* firemen *for* firemen, Hannay Hose Reels have served so faithfully for over twenty years that they are accepted as the standard of quality by thousands of firefighters.

Your men and your equipment deserve the finest. Make sure they *get* it. *Specify* Hannay Fire Hose Reels.

MEMBER

Sustaining Member

Write for free 16-page catalog of complete line.

... Greatest Name in Hose Reels

HANNAY®

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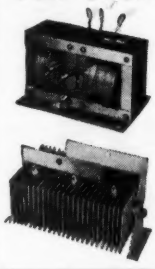
CLIFFORD B. HANNAY & SON, INC., 626 OAK ST., WESTERLO, N.Y.

Leece-Neville

AC-DC ALTERNATOR SYSTEMS Guarantee the Current You Need to Get to the Fire... and to Fight the Fire

110 VOLTS FOR POWER TOOLS, LIGHTS



Installation of a Leece-Neville Transformer and 110 volt Rectifier with your L-N Alternator will provide up to 1200 watts of 110 volt d.c. current for spot and flood lights, half-inch drill, power saw etc. Send for special bulletin.

A GENUINE L-N ALTERNATOR AT A SENSATIONAL LOW PRICE

For loads up to 60 amps at 6 volts or 50 amps at 12 volts, see the new L-N Standard Alternator System that costs *less* than "extra" output d.c. generator.

Sirens, lights and 2-way radio make a heavy electrical load that can drain the battery. Leece-Neville Heavy-Duty Alternators, which replace conventional d.c. generators, have the capacity to carry the load: up to 95 amperes for 6 volt systems; to 180 amperes for 12 volt; to 100 amperes for 24 volt.

At the fire, L-N Alternators produce up to 40 amperes with the engine idling, keep batteries "up" and permit use of 2-way radio.

THE ORIGINAL AC-DC GENERATING SYSTEM—RECOGNIZED EVERYWHERE

Since 1946 more and more Fire Departments have made L-N Alternators standard. Some of these are Atlanta, Boston, Buffalo, Chicago, Cleveland, Dallas, Denver, Detroit, Los Angeles, Miami, Montreal, New York, Pittsburgh, Toronto, and many others, large and small.

Be sure to specify Leece-Neville on new apparatus and in your modernization program. For all the facts, and name of your L-N Distributor, write The Leece-Neville Company, Cleveland 3, Ohio. *Distributors in principal cities . . . Service Stations everywhere.*

YOU CAN RELY ON Leece-Neville

Automotive Electric Equipment Since 1909

TRUCK • BUS • DIESEL • INDUSTRIAL • PASSENGER • RAILROAD • MARINE • OFF-HIGHWAY

ALTERNATOR SYSTEMS

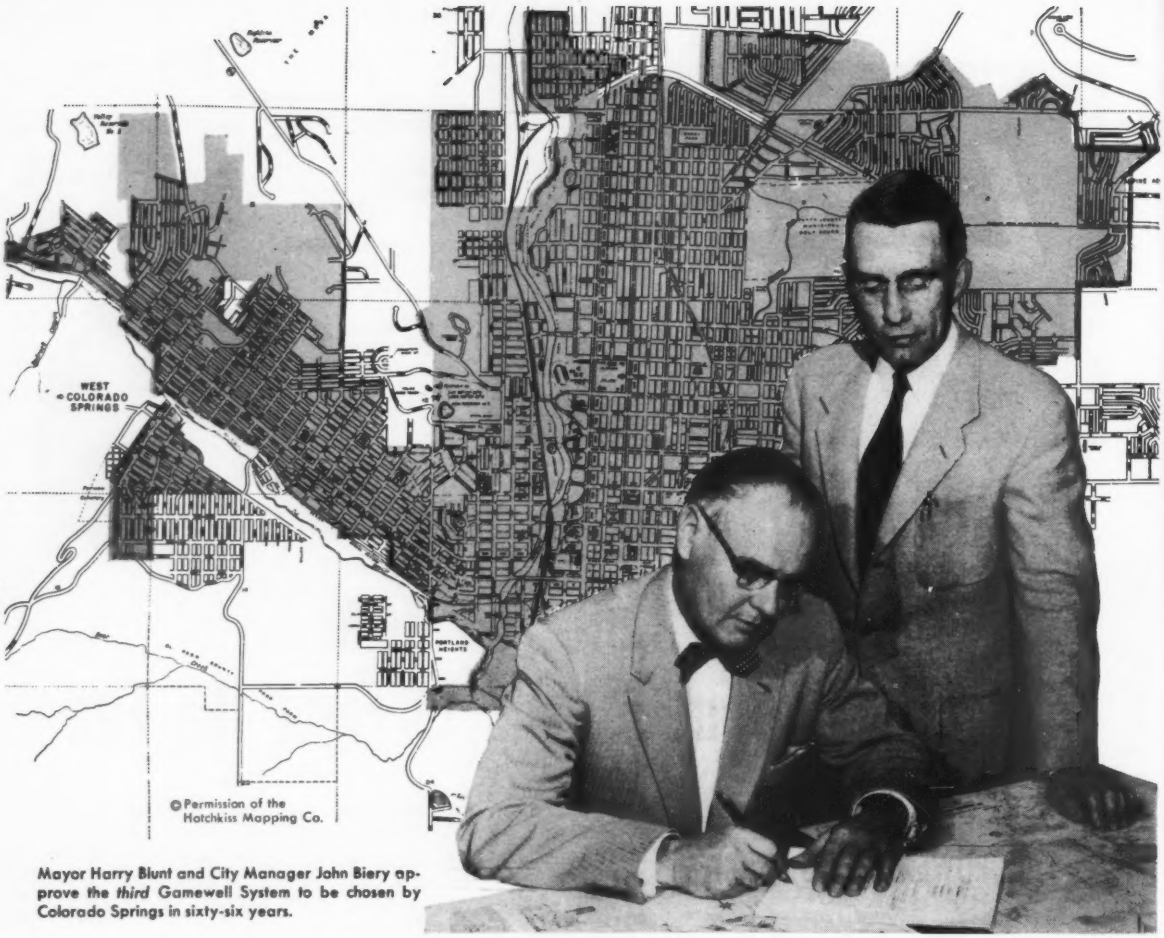
D C GENERATORS

CRANKING MOTORS

REGULATORS

SWITCHES

SMALL MOTORS



Mayor Harry Blunt and City Manager John Biery approve the *third* Gamewell System to be chosen by Colorado Springs in sixty-six years.

Colorado Springs Buys Third Gamewell System

City-wide survey basis for specifying municipally-owned coded fire alarm telegraph network.

That faithful red fire alarm box on the corner is growing hand-in-hand with Colorado Springs. The original Gamewell System was installed in 1889, followed by a second system in 1914. The third, now being installed, was selected after an exhaustive cost and safety comparison with voice-type service.

Gamewell helped Colorado Springs expand its fire protection to meet modern growth and high value concentrations by making a city-wide survey in 1954. The detailed report, with maps, costs and recommendations, showed how a coded telegraph system gives the entire community, *safe*, fast and reliable alarm facilities to meet all their needs exactly.

Call for a Gamewell Survey

Don't fall behind the growth pattern of your city. A Gamewell Survey can pin-point — and anticipate — alarm system requirements. Use it to get up-to-date and stay up-to-date . . . a Gamewell fire alarm system costs less and gives maximum protection.

THE GAMEWELL COMPANY
NEWTON UPPER FALLS 64, MASSACHUSETTS
In Canada: Northern Electric Co., Ltd., Belleville, Ont.

Remember — a Gamewell System is FIRST when SECONDS Count!

GAMEWELL®

THE BOX IS POSITIVE
Reduces Human Error

VOL. 109, NO. 1

FIRE ENGINEERING

JANUARY, 1956

WOOLLEY Takes Over Editorship

IN RECOGNITION of his outstanding contributions to the fire service through the columns of FIRE ENGINEERING, during the past twelve years, Roi Bronson Woolley, who has served as assistant editor since June, 1944, was advanced to the position of Editor on January 2.

Before originally joining FIRE ENGINEERING, Mr. Woolley had been identified with the fire service for many years, including several years as Assistant Chief of the Larchmont, N. Y., Fire Department.

He was one of the founders, and for several years, president of the Westchester Fire Chief's Emergency Plan, a mutual aid organization. This Plan has provided the pattern for cooperative fire defense units in states from coast to coast.

During World War II he served as Chief of Fire Coordination of the Federal Civil Defense Administration at Washington, D. C., and was a member of the Federal Fire Council.

At present he is Chairman of the Communications Committee of the International Association of Fire Chiefs, as well as a member of several committees of the National Fire Protection Association and the Fire Department Instructors Conference.

His work as Assistant Editor of FIRE ENGINEERING has been widely acclaimed, and his series of treatises on Modern Attack in Fire Fighting, Fire Department Ladders, Salvage Operations, Overhauling, etc., have set a new standard in fire department literature.

This change in editors will have no effect on the general character of FIRE ENGINEERING, for those features which have proven interesting and helpful to our readers over the years will be continued. But it is planned to even increase the service to the field by adding, from time to time, additional features which will measure up to the high editorial standards which have been set for material appearing in this journal.

As most of our readers are aware, FIRE ENGINEERING has been in the van in sponsoring and advocating practically every new development in the field of fire protection in the past quarter century. And it is particularly gratifying that each development so sponsored and advocated has ultimately proved to be a major advance in the field.

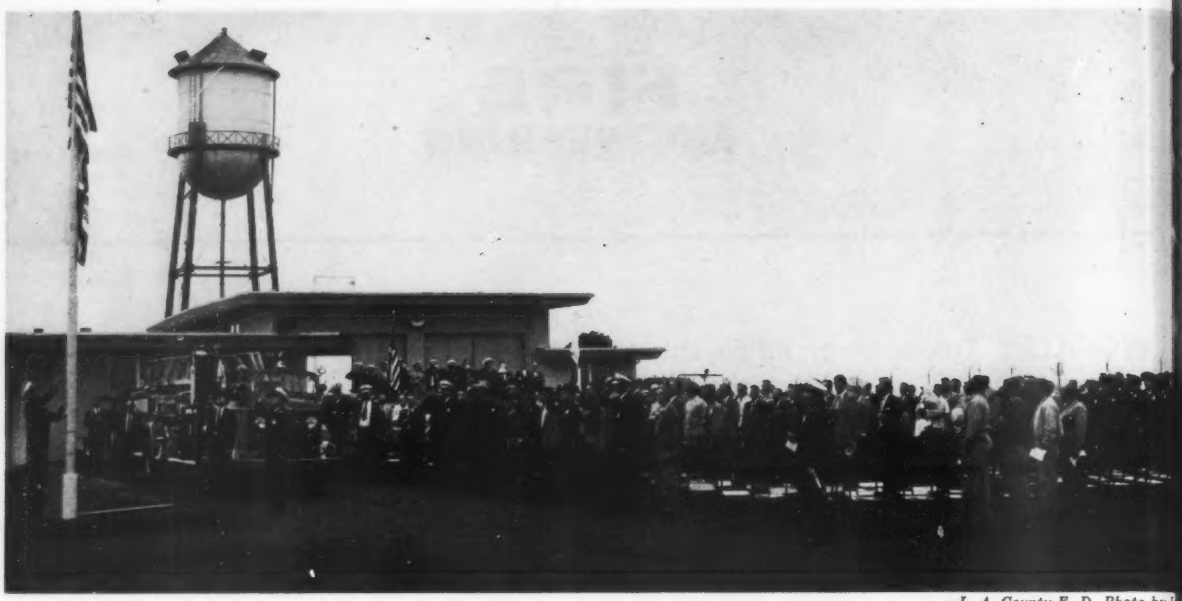
The function of a successful technical journal is to keep its readers fully informed on changes occurring in their field of endeavor; to guide them in determining the value of new methods and equipment entering the field. Such guidance requires a qualified editorial staff—a staff possessing both practical experience and technical background.

The advancement of Chief Woolley to the chair of Editor of FIRE ENGINEERING is a move which will assure continuance of the leadership in fire protection won by this journal over the years.

The present Editor, whom Mr. Woolley succeeds, continues as Editorial Director.

Fred Merrell

EDITORIAL DIRECTOR



—*L. A. County F. D. Photo by L*

Flag is raised at dedication ceremonies of new L. A. County Cecil R. Gehr Combat Fire Training Center. Training station at rear

Los Angeles County Dedicates Training Center

By CLIFF DEKTAR

AMERICA'S NEWEST FIRE TRAINING CENTER was formally dedicated by the Los Angeles County Fire Department on the morning of November 14.

More than 300 guests gathered on the beautiful, 4.62 acre site in the City Terrace Section east of the Los Angeles Civic Center to witness the ceremonies by which the $362,000 training facility was dedicated as a living memorial to the late L. A. County Fire Chief Cecil R. Gehr.

Chief Gehr was killed on July 14, 1953, while responding to a forest fire alarm in the San Gabriel Mountains.

Attending the ceremonies were fire chiefs from throughout Southern California as well as city, state, county, and civic leaders.

Among the guests were Dr. John Gerletti, Director of the Fire Administration Training Program of the University of Southern California and Dr. Keith Arnold, University of California School of Forestry and Manager of "Operation Firestop."

Also attending were Mrs. Gehr, widow of Chief Gehr, and his two sons, George and William.

After being introduced by County Fire Chief Keith E. Klinger, Mrs. Gehr spoke briefly and unveiled a bronze plaque in her husband's memory. The plaque is mounted on the wall of the training headquarters.

Then the guests watched a well-executed drill by County Engines 3 and 32, Truck 27, Rescue 39, under Battalion Chief K. W. Bicksler.

The training center, including the drill tower, contains over 15,515 square feet of floor space.

There are more than four acres of

—*L. A. County F. D. Photo by Landrum*

L. A. County Fire Chief Keith E. Klinger and Mrs. Cecil R. Gehr, as Mrs. Gehr unveils memorial plaque on wall of new department training center dedicated to her late husband

blacktopped paved area available for drilling. Located in this area are the four different types of hydrants used by the department and the underground fire engine testing sump with 52,000-gallon capacity. Four rigs may be tested here at one time.

The center, which is surrounded by chain link security fences, consists additionally of the drill tower and the combination training station and center headquarters.

Five-Story Drill Tower

The tower has five floors and is 65 feet high with an outside fire escape and interior stairs. There are smoke chambers to provide for gas and smoke training. The basement is sprinkled and basement stairs are of metal construction. The tower has four different types of windows, and intensive training is given on opening these windows without use of an axe. The tower also has a complete public address system throughout with both interior and exterior speakers.

The two-level headquarters building contains a complete fire station with space for three engines and a truck. Dormitory facilities for 15 trainees are provided with space for two captains included. There are modern kitchen facilities and a classroom-auditorium which will seat 200. This room is equipped with all modern training aids and a permanent fire equipment display.

The ground floor of the structure contains space for vehicle storage, fire prevention bureau storage, fire alarm repair room, and a fire prevention laboratory.

A new 1000-g.p.m. triple combination unit, with a 500 gallon tank, has been purchased and is stationed at the center for training purposes. Completely equipped including two-way radio, the rig is available for greater alarm responses. An OCD rig is also quartered at the center.

The training center is located above and adjacent to the department's modern headquarters building. Nearby also are the fine training facilities of the County Sheriff's Department and the Sheriff's radio center.

The center was proposed by retired Chief Spence D. Turner in 1947. Deputy Chief Joseph J. Davis and Battalion Chief George R. Taylor, both also retired now, were also very active in securing plans from other departments for study.

Students in a fire administration course at U. S. C. each prepared a paper on requirements for a modern drill center. John P. Hughes, County F. D.'s Assistant Fire Rating Analyst, made a study of these papers in 1952 for Chief Gehr.

Departments throughout the United States were contacted or visited by Chief Klinger or Battalion Chief Lewis A. Mabie, department training officer. Some of the departments included Fresno, Calif.; New Haven, Conn.; L. A. City; Burbank, Calif.; Pasadena, Calif.; Bakersfield, Calif.; Harrisburg, Pa.; Rochester, N. Y.; Dayton, Ohio; State of Pennsylvania Fire Training School; Santa Monica, Calif.

Work began in August, 1954, and was completed in August, 1955.

Firemen put on exhibition for guests at dedication of Los Angeles County Fire Department's new Cecil R. Gehr Combat Fire Training Center. Five-story drill tower in foreground; training station, dormitory and offices at rear. In foreground is 85-foot aerial of Truck 27, while Engines 3 and 32, at right, hook to hydrants—*L. A. County F. D. Photo by Landrum*

100 Rookies Trained

Because of a serious lack of firemen, caused by the department's phenomenal growth, 100 rookies already have been trained. Personnel receive all training at the center except for oil field work, which is done at Engine 17 in the Santa Fe Springs oilfield district where elaborate equipment for this type of training is located.

Departmental drill manuals have been completely revised to take full advantage of the center's new facilities. Beginning January 1, 1956, an intensive in-service training program commenced for captains. As soon as all captains have completed their course, an engineer's course will begin. Personnel report to the center for their work.

"We are extremely proud of this center," commented Chief Klinger. "It will enable us to train even better firemen and in a profession where superior training may save a man's life, we feel that our money has been well spent.

"It is only fitting that this facility, where we hope hundreds of young men will begin their fire service careers, be dedicated to Cecil R. Gehr, a fireman's fireman."

U. S. Army and German fire fighters stage fire fighting demonstrations at Heidelberg University: (Left) Fog-foam produces blanket for smothering spill fires; (Right) Hand extinguisher about to be used on simulated chimney fire

1955 Drive for Fire Safety Sparkplugged as Municipal, Military and Industrial Fire Forces Feature

FIRE PREVENTION WEEK

FIRE PREVENTION WEEK in 1955 saw the nation's fire forces in all categories spearheading promotion designed to reduce the alarming losses of life and property from fire.

Not all of this activity was inspired by hopes of winning awards in the national Fire Prevention Week contests; many fire departments join in the promotion because they find it good business both from the viewpoint of their relations with the public, and because it helps their organizations keep alive the interest in preventing fires as well as fighting them.

Perhaps it is true that almost all the avenues of printed and personal promotion appear to have been exhausted in connection with publicizing Fire Prevention Week, but each year, some departments manage to either produce some new approach to the problem, or to give an old idea a new twist.

The following extracts are taken from among the many reports on last year's campaign reaching FIRE ENGINEERING, in the hope they may suggest possible promotions for this year's (1956) drive.

Army Stages Fire Prevention Show

A fast moving week of fire prevention and fire fighting demonstrations, open houses, and displays pointing up National Fire Prevention Week in Headquarters Area Command, was climaxed with a colorful firemen's parade and German-American fire fighting show at Heidelberg's University Place, Heidelberg, Germany.

Throughout Headquarters Area Command, fire station crews displayed their equipment and techniques before the public and engaged in short instruction drills reminding Command personnel and the public of fire dangers and the means to combat them.

The systematic and dramatic program of inspection and education be-

gan with special attention on public assembly places. Included were shopping centers, offices, shops, and storage areas. Fire drills were practiced at each military kaserne and American Dependent School in conjunction with local fire departments.

The German public actively participated by visiting Army fire stations in Heidelberg and Mannheim.

Climaxing Fire Prevention Week, German and American firemen paraded through Heidelberg's business district, arriving at the famed University Place. Here fire fighting contests and demonstrations were staged for several thousand spectators. A fire extinguisher manufacturer participated by demonstrating and displaying some of his newest fire fighting equipment.

United States Army Europe fire loss statistics, for the fiscal year, indicate that Headquarters Area Command ranked third in Fire Prevention. First and second were the smaller principalities of Berlin and Bremerhaven. Investigations showed that the primary causes of fire were electrical wiring and appliances, flammable liquids, matches, and overheated grease.

Although this year's annual Fire Prevention Week is only the fourth such campaign participated in by this Command, army reports show that fire losses have been steadily decreasing in the United States Army Europe.

In a letter to all members of Headquarters Area Command urging participation in Fire Prevention Week, HACom Commanding Officer, Colonel Charles F. McNair, stated recently, "Each of us has the responsibility of being a self-appointed fire warden and safety coordinator. We should utilize Fire Prevention Week to take stock of our existing fire program, and to indicate new and more effective measures to ensure adequate protection against hazards which cause fires. We should also critically review our own individual habits with a view towards eliminating those habits which inadvertently cause fire.

Year-Round Vigilance Urged

"It is vitally important that we do not let ourselves become fire conscious for one week, only to slacken our efforts for the rest of the year. In the interest of personnel safety, protection of property and supplies, and the accomplishment of our Armed Forces Mission, we must maintain constant year round vigilance against fire."

Animated Displays Popularize Racine's Campaign

Spearheading the Racine, Wis., Fire Department's Fire Prevention push were a number of animated displays which were distributed to various banks and mercantile establishments throughout the city.

The animation showed a near-life-size picture of Fire Chief Rudolph Anderson, Racine's popular chief, in which his arm, shown in the accompanying illustration, moved up and down, emphasizing the slogan "Fire Safety is YOUR Job, too."

According to Matthew M. Flynn, Bureau of Fire Prevention, Racine Fire Department, the action displays did very well in helping sell Fire Prevention Week.

History Tied To F. P. Week Program

The Quaker City believes in doing things in a big way. For many years it has won honors in Fire Prevention Week contests and the 1955 effort maintained the fast pace set by that city's aggressive fire department.

The 1955 Program, sponsored jointly by the Fire Department and the Chamber of Commerce, was launched at historic Independence Hall on October 10 last. There were bands and addresses by leading city officials, including Fire Commissioner Frank L. McNamee.

A feature of the inaugural ceremonies was the dedication of the Fire Department's new "Giant Deluge" unit described in the December number of FIRE ENGINEERING. Deputy Commissioner and Chief of Department George Hink directed these ceremonies. An elaborate dedication program, and the chronological schedule of the Department's Fire Prevention Week festivities were distributed. The local buff's organization, the Box 1776 Club, had a part in the affair.

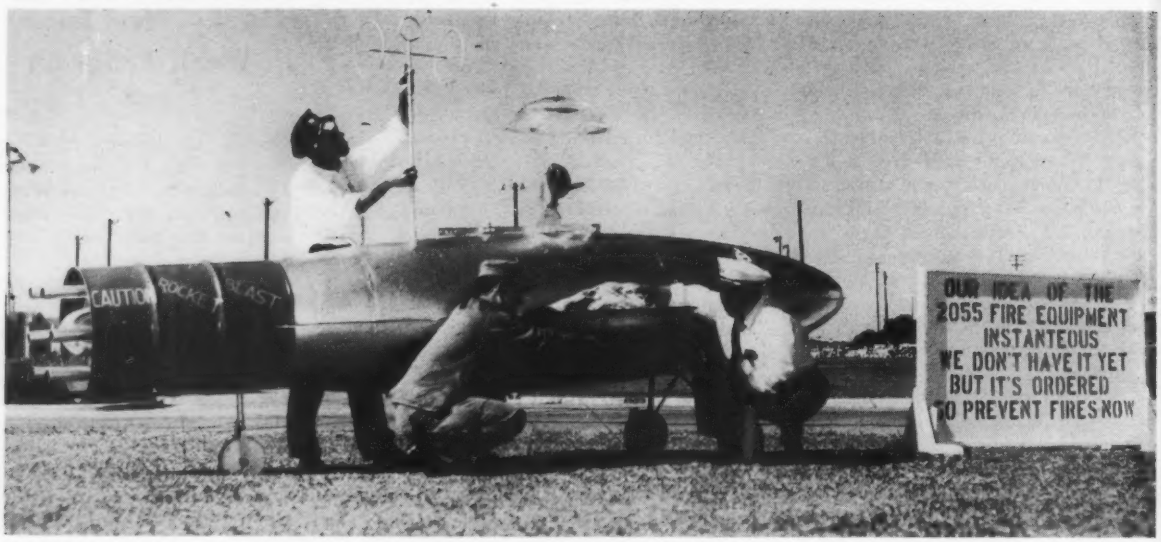
The campaign included, besides the historic presentation, and narration of the story of fire protection from hand pump days to the present, by Captain Joseph T. Gibbs of the Philadelphia Fire Department, such affairs as caravans and parades; education programs in the schools, industry and hospitals; "thrill shows"; memorial tributes; fire fighting displays; lectures, together with all of the approved promotional activities of previous drives.

Contests Held

One of the features of the Philadelphia 1955 Fire Prevention Week campaign was a contest between the city's fire companies for fire station displays, both exterior and interior.

The winning outside display was that of Engine 59 and Ladder 18. It consisted of giant photographic cutouts of officers and firemen in fire fighting turnouts. The interior award was won by Engine 3, with a shocker display depicting the fate of persons who smoke in bed. One bed was shown occupied by a clothing store dummy over which was a placard reading, "This Bed for People Who Sleep in Bed." On the right-hand side of the display was a coffin, in which was another dummy figure, with this sign over it: "This Bed for People Who Smoke in Bed."

Continued on page 34



"Future" fire apparatus proves attention-getter at Ellington Air Force Base

Fire Fighting Facilities—Year 2055

Highlighting its Fire Prevention Week efforts, Ellington Air Force Base, Tex., dreamed up this snazzy jet "fireplane" job to convey an idea of what fire fighting equipment will be like in the year 2055.

Ellington's Fire Chief Vernon P. Eschenfelder and Fireman Rudy Perkins anchor flying fire fighter to the ground, while Ira L. Blau, fire inspector, adjust the plane's antennae.

The fireplane, wrought out of old fighter plane wings and other salvaged parts, was located at the Base's main gate during the Fire Prevention Week's observance. Note the sign at far right with its fire prevention message.

Gardner, Massachusetts, goes after Children

Chief Casavant realizes the importance of selling the fire prevention message to children. Here he is with the students of one of the parochial schools in Gardner

Fire Chief James F. Casavant, of the Gardner, Mass., Fire Department, is another official who believes in inculcating the idea of fire prevention into the minds of youngsters. The 1955 Fire Prevention Week drive included lectures in all city schools, conducted by members of the Gardner Fire Department. In turn, the kids were urged to alert their families to the importance of fire safety measures, learned by them in school.

The official 1955 poster of Fire Prevention Week was featured as widely as possible, and it won the interest of children, as shown in the illustration.

The youngsters shown in the picture are members of the Holy Rosary school of Gardner, Mass.

Chief Casavant reports that the program was successful in securing the cooperation of both children and teacher.

Count the Match Contest

The Indian Hill and Maderia Fire Co. of Indian Hill, Ohio, serving the Kenwood Fire District, gets out an interesting little house organ "Your Fire Department," which is used to carry messages to the public—particularly taxpayers, promoting the ideas of fire prevention and the local fire force of volunteers.

The publication was used last October to promote Fire Prevention Week, the feature being a contest to attract the small fry. It was called "Count the Match" Contest and children were asked to count the matches shown in a cartoon, then to tell in twenty-five words why they thought smoking in bed was dangerous. The two leading prizes were a life-scale ladder truck and a searchlight model truck. The idea caught the youngsters' fancy and reportedly went over big.

Essay Contest Sparks Hamilton AFB Program

The year's fire prevention campaign at Hamilton Air Force Base, California, was a must to the Base personnel. Talks on fire prevention were given personnel in theatres. Training films were shown with Fire Chief Taft and Chaplain (Major) Norris T. Morton leading the lecturing.

The illustration shows Colonel Wilton H. Earle, Jr., of the Base, presenting a $25 bond to Miss Jean Marie Mason, 11 years old, of Corte Madera, Cal., winner of the 1955 Fire Prevention Essay Contest. Chaplain Morton (center) chairman of the Fire Prevention Campaign, and Chief Samuel J. Blumenburg (right) are looking on.

Raritan Arsenal uses billboards to broadcast fire prevention message

Hazy The Hazard Hound

"Hazy the Hazard Hound" puts humor and punch into the Fire Prevention Week promotion at Raritan Arsenal, Metuchen, N. J., last October.

Artist Gieber may have had in mind cartooning "Sparky" the fire dog when he conceived "Hazy" but regardless, his hazard hound helped drive home the major points of fire prevention, used as it was, on various printed promotion pieces, including placards and in larger displays.

Raritan Arsenal keeps up a steady barrage of warnings to all personnel to practice safety throughout the installation.

Miniature fire car aids South Haven, Mich., fire fighters put across fire prevention message in public schools

Fire Prevention Car Takes Story To Kids

The South Haven, Mich., Fire Department, Leslie Olmstead, Chief, and Gil Wyers, Assistant Chief, cultivated the youngsters of the area to get over the 1955 Fire Prevention Week story. They were successful, using the "Crosley Fire Prevention Car," with its posters of Sparky and Smokey the bear as the attention-getter.

Chief Wyers reports the car was taken to twelve different schools and that it ran up 200 miles in its travels around town. The School children were given Sparky comic books.

Volunteer firemen from GMC Truck and Coach Division's eighteen fire brigades battle paint thinner fires with carbon tetrachloride. Judges with stopwatches (standing behind fire extinguishers) time each contestant to determine how fast he extinguishes his fire

Contests Prove Effective

In Developing

Speed in Fire Control

A PISTOL SHOT rings out on an athletic field situated near a Midwestern industrial plant, and 18 men stride toward a group of fire extinguishers lined up on the baseball diamond.

Armed with the fire fighting units, they converge on a row of metal vats belching smoke and flames. Calmly using their extinguishers, they shoot dry chemicals on the blazing paint thinner, wheel around, and return to the starting line.

"Well done, men!" booms a voice from a platform overlooking the field. "Return to your brigades. Next contestants prepare to fight Class 'A' fires."

Contests Held Annually

This scene is duplicated each year at the annual Fire Brigade Contest staged by GMC Truck and Coach Division of General Motors at its headquarters in Pontiac, Michigan.

Although the men handle the extinguishers with the competence of seasoned firemen, they actually are GMC industrial workers who are serving as voluntary members of the Division's 18 fire brigades.

The high point of their year's activities is the Fire Brigade Contest. It not only gives them an opportunity to put their classroom skills to practice, but it also enables them to compete for a rotating trophy awarded to the brigade winning the highest number of points.

Scoring is based upon the speed, skill and thoroughness with which each brigade member puts out different kinds of industrial fires.

"Our yearly contest is not just another sporting event," points out GMC Fire Chief Kenneth E. Goodell. "It is designed to give members of the volunteer brigades practice in extinguishing industrial type fires under pressure.

"Although the contestants are racing against time, they must walk, not run, to the fires and are penalized point-wise if they break stride. They are disqualified if their fire is not completely out. We don't want our men to panic in the event of a real fire. We only ask that they do a fast and thorough job."

That's exactly what the brigades have been doing, a fast and thorough job, since they were organized in 1952 by Chief Goodell and Harvey M. Johns, plant protection supervisor who heads the brigade program.

"The brigades were established to augment our forces of regular firemen," said Johns. "And the benefits of such an organization have been dramatic."

He said the number of plant fires at GMC has declined steadily since the brigades came into being. From 68 fires in 1952, the number dropped to 11 last year.

"This year we've only had one minor

Rivalry in Extinguishing

Chief Kenneth E. Goodell fires a blank cartridge to signal the start of a new event while Harvey M. Johns, plant protection supervisor, chalks up scores from a previous contest

chargeable fire," continued Johns, "and that's quite a record in itself."

He said the volunteer brigades' contribution to fire safety at GMC has been twofold. First, minor blazes are snuffed out before they get a chance to spread; secondly, brigade members have become so fire-conscious that they police their departments and rid them of possible fire hazards.

"Another very important benefit derived from the program is that the fire-safety attitude of the volunteers, like a fire itself, spreads rapidly among the volunteers' fellow workers," explained Johns. "More and more of our employees are becoming more fully aware of the serious threat of industrial fires and are learning the methods to guard against them."

Johns traces the enthusiasm toward the fire brigade program directly to the annual Fire Brigade Contest. The event generates so much good-natured rivalry and general interest that recruiting new brigade volunteers no longer is a problem.

"Early in the program, we had a tough time recruiting brigade members," Johns said. "But now we have a long waiting list of employees wanting to become part-time firemen. Enthusiasm for the program literally is at a fever pitch."

This gains added significance when the training program of a volunteer is fully understood. Plenty of hard work, by both the volunteers and the program directors, goes into making fire fighters out of men who generally never had a fire extinguisher in their hands before joining a brigade.

Although the roles Chief Goodell and Johns have played in welding together a co-ordinated fire fighting team must not be minimized, much of the credit belongs to the brigade captains. As the heads of their units, the captains must keep abreast of the latest fire prevention practices and fire fighting methods. Information they receive from Chief Goodell and Johns must be passed along to members.

Training sessions, of course, are absolutely essential for instructing new members and providing "refresher" courses for experienced volunteers. These are conducted periodically throughout the year by Chief Goodell and his staff of regular firemen.

The effectiveness of the program is dramatized at the Fire Brigade Contest. Here the volunteers get an opportunity to put their knowledge into practice by extinguishing the types of fires that prey on industrial plants.

When the day of the contest arrives, 18 fire brigades composed of some 250 men gather at the GMC Athletic Field in Pontiac. Chief Goodell conducts the contest, and it is his pistol, firing blanks, that launches each event.

Eight events are run. The captain of each brigade names one of his men to participate in each contest.

At the sound of Chief Goodell's whistle, the men from each of the 18 brigades walk to starting lines midway between the fires and the clusters of fire extinguishers.

The Chief then signals for the non-participating volunteers to light either the excelsior or the paint thinner, depending upon the type of fire needed for that particular event.

"As different types of fire extinguishers are used for each event," said Chief Goodell, "the volunteers get practice with various types of extinguishers under actual fire conditions."

Timers with stop-watches judge each event. The brigade with the speediest and most thorough fire-fighters wins the trophy.

As each brigade wants to walk off with the top honors, rivalry between the contestants is keen. And this good-natured rivalry is encouraged by the program directors.

"After all, this sort of competition builds teamwork," said Johns. "And that's the very essence of our program —teamwork."

Research in Fire Control

The Federal Civil Defense Administration, on October 14, entered into contract with the National Academy of Sciences, Washington, D. C., to conduct research on the spread and control of large fires, directed particularly towards development of techniques of controlling and understanding of the fundamental factors involved.

Some of the activities planned for the program of research are:

1. Research on fires, large and small.

2. Identification of fundamental laws of nature involved in origin and spread of fires.

3. Investigation of the controlling and extinguishing action of water with a study of the principles and mechanics of oftaining a higher percentage of the total controlling and extinguishing potential from water.

4. The utilization but not duplication of research in other fields on the chemical kinetics of combustion.

5. Integrating knowledge of meteorological factors to the problems of fire development and fire spread.

6. Organizing the instrumentation for prompt study and the collecting of data from large natural or large model fires.

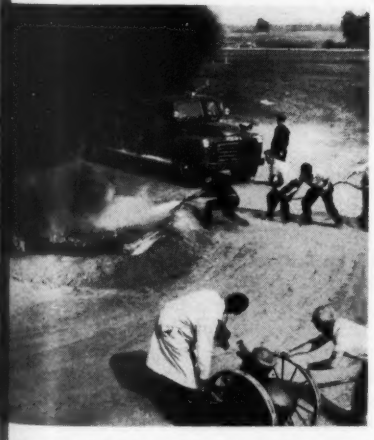
7. Utilization of laboratory studies preliminary to field studies of natural fires or large model fires.

8. Research in new and promising methods of fire prevention.

9. Other areas as mutually agreed upon.

An initial appropriation of $30,000 has been made for starting the program of research. It is expected that a larger amount will be made available for carrying on the work once it gets under way.

Fire Develops Efficiency Among Industrial Brigades



Battling a huge pit fire, these captains of GMC Truck and Coach Division's volunteer fire brigades shoot dry chemical on 50 gallons of flaming paint thinner at demonstration staged in September

F. R. Falberg (right), factory manager, presents trophy to Peter Blau, captain of the winning brigade, which is composed of day shift employees in the Sheet Metal Department

By ROI B. WOOLLEY

Good teamwork forms basis of efficient salvage. Members of Cincinnati's Underwriters' Salvage Corps are shown spreading covers and cleaning up at 3-alarm sanatorium fire, December, 1954. One hundred twenty covers were used to materially reduce property damage. This city's salvagemen are thoroughly trained to work in teams—*Photo courtesy Cincinnati Underwriters' Salvage Corps*

PART IX

Importance of Manpower in Salvage

THE SIZE OF THE SALVAGE CREW, i.e.: number of men available to perform effective salvage operations, depends somewhat upon whether the fire department is responsible for salvage work, or whether it is performed by a separate salvage corps, or squad.

As we have previously pointed out, the trend today in this phase of fire protection is toward delegating the task to the fire fighting forces on the logical assumption that salvage is inextricably dovetailed with fire control, extinguishment and overhaul.

Man Power Situation Acute

As for those cities still operating underwriters' salvage patrols and squads, their manpower problem grows increasingly acute. They are finding it difficult to maintain working crews at what the heads of such services believe requisite for effective salvage and reclamation operations.

The problem is not alone one of manpower in numbers, but in securing and holding personnel having the necessary physical and mental qualifications for the job. At best, salvage work is physically enervating; salvage corpsmen must possess better than average physical stamina.

Some of the Underwriters' patrols have found it difficult to interest and hold the type of physically fit and mentally alert men they require to maintain their crews at a safe minimum strength. That may be because in some instances the salvage job is not presently sufficiently attractive, both salary-wise and from the viewpoint of opportunity for advancement.

This is a matter of serious concern to some salvage officials who are forced to retain in their organizations men who may have reached retirement age, or who for one reason or another, are physically and mentally unfit to meet and cope with the more strenuous phases of their work.

Teamwork Essential

In view of the great importance of teamwork in effectuating salvage, it is obvious that any one member of a salvage crew who may be below par physically or mentally can jeopardize the effectiveness of the entire squad or crew. This may not have been the sole reason why one large southern city's fire department declined to take over the municipality's entire salvage corps outfit, lock, stock and barrel for the sum of one dollar, but doubtless the question of manpower had a bearing upon the decision.

As for opportunities for advancement and promotion, it is generally true that these are greater in the field of fire fighters than in that of salvagemen. This is another reason advanced by students of the problem as to why salvage work should be undertaken by, and be the responsibility of, the fire department. However, it should be said that even from the viewpoint of the fire department which attempts to carry out its own salvage operations, the manpower problem is nonetheless serious.

Few fire departments, with or without salvage units, are today operating at requisite manpower levels. The question is asked, if there is insufficient personnel to efficiently perform fire attack, rescue and extinguishing operations, how then can it be expected that the depleted force can accept the responsibility of effective salvage and reclamation duties?

If salvage is as important in the vast and intricate 'business' of fire protection and prevention as most authorities believe it to be, obviously those charged with its responsibilities should be given the necessary manpower to effectuate it. That means that the staffing of salvage crews should receive the same consideration as that given fire fighting and rescue units.

The heads of fire departments, and those of Underwriters' corps and patrols, will have to decide whether or not, from the purely practical standpoint, the installation of additional personnel and/or a separate salvage squad is justified. As Chief Frank C. McAuliffe, head of the Chicago Fire Insurance Patrols, points out in his pamphlet *"Fire Department Salvage Operations"* (Pub. by N.B.F.U. 1954): *"The installation of a separate salvage company is not generally justified unless it is apparent that it can produce in actual saving a comfortable margin above its cost in operation."* And he adds *"It must be understood that salvage operations are not necessary in the saving of life or controlling of fires."*

Should Salvage and Other Services Be Combined?

Although, as Fire Engineering has determined from information received from many representative fire chiefs throughout the nation, the principal difficulty in conducting effective salvage work is the shortage of personnel, not a few of the chiefs who reported on this problem have been successful in organizing their salvage activities by coupling them with rescue and emergency services through what might be called rescue and/or emergency companies, or squads.

Many of these chiefs have found they can more easily finance the combination rescue-salvage facility than they can the separate and individual salvage unit. In certain communities, the combination unit carries *all* the department's salvage equipment; in others, the combination salvage-rescue companies are maintained regardless of how much other salvage equipment is carried on the regular fire apparatus. By having such special squad units equipped with salvage covers and other paraphernalia in addition to all the fire fighting units, the departments in question are better able to institute salvage operations at a fire, without delay, whereas if it was necessary to hold up salvage operations until fire fighting crews had completed their fire control tasks, much of the effectiveness of the salvage operation would be nullified.

As to the actual number of men required for effective squad operations, this, of course, depends upon the extent and importance of the incident. Some fires that rate as insignificent, as blazes go, may entail the most exhaustive and time-consuming salvage operations. On the other hand, other fires that assume conflagration proportions may call for a minimum of salvage, there being little left to save or reclaim.

Multiple Units Maintained

It is the practice of the Underwriters' salvage patrols and squads to maintain more than a single unit; in fact, most of those still in operation have several sections, the procedure being to respond to assigned areas with a single unit and to reinforce this as occasion requires. For this reason the first call is not responded to by the entire salvage corps personnel, but only the regularly assigned crew of the individual salvage truck or "wagon", as some are still dubbed. Thus, if there should be a simultaneous fire or other emergency requiring the services of the patrol or squad or reinforcements are wanted at the original incident, there are men and equipment ready to respond.

Where salvage work is carried on by regular fire department personnel, either by separate department salvage squads or by members of ladder or other crews detailed to the task, the practice of equipping each individual piece of apparatus with at least some

Post fire salvage may call for special skills. Salvage crews are aided by bibliophiles in efforts to recover and reclaim valuable books and records at this University of Michigan Library fire. The expert salvage specialist must have a wide knowledge of articles and things that can burn, of their relative original and reclamation value, and of the processes of protecting and recovering them

salvage covers and other essential equipment has proved effective because, as the emergency worsens and more salvage reinforcements are required, the apparatus responding to the multiple alarms or special calls rolls in with the additional salvage reinforcements, too.

Rating Board Gives Credit For Salvage

The National Board of Fire Underwriter standards do not provide for separate salvage companies. There is no established yardstick for determining the number of separate salvage units or companies, either operating as a part of a municipal fire department, or as separate individual units. The State of Texas Fire Insurance Department has a rule which serves as a guide in that State in determining how many salvage companies should be placed in service. It calls for at least one salvage unit, or company, in cities of 200,000 population, and one additional salvage company for every 200,000 population.

The National Board of Fire Underwriters "Standard Schedule for Grading Cities and Towns of the United States," which is used in evaluating cities and towns of the nation with reference to their fire defenses, has this to say concerning salvage:

Salvage Appliances—Salvage equipment, including covers, squeegees, mops, brooms, sawdust, tarpaper, sprinkler heads and tools, shall be sufficient in amount, so distributed, and with response so arranged that satisfactory salvage service can be performed in the area covered by the fire department. The equipment may be either on separately manned apparatus or distributed on other fire apparatus, but in cities of over 100,000 population, there shall be, in addition to that carried on pumpers and ladder truck, at least 20 covers on a piece of apparatus, in service or reserve, located in proximity of each high value section susceptible to heavy water damage. For Amount, Distribution and Response of Salvage Appliances: Use ¼ Deficiency Scale.

How Large Salvage Working Crews?

Although the National Board offers suggestions concerning the number of firemen required to effectively man and operate other types of fire equipment, such as ladder trucks and pumpers, no recommendations are advanced concerning the size of the individual salvage crews necessary for performing minimum or maximum salvage and overhaul, whether the men be classed as laddermen, or pipemen, hosemen or outright salvagemen.

Superintendents and chiefs of Underwriters' patrols generally agree on the minimum of six men and an officer to perform efficient salvage operations.

In a previous chapter of this text, we pointed out the contention advanced by certain fire chiefs who actively engage in salvage that "two men off a truck could cover down a twelve or fourteen-room dwelling and protect all property therein from getting damaged in any way whatsoever."

Some chiefs may call this too optimistic; it depends, of course, upon the involvement of the building by fire, and the amount of water used in extinguishing the blaze—and how and where it is used. But those officers familiar with organized, systematic salvage, and working with fire fighters who know how to get the greatest results from the water they use, agree that good salvage work can be done by any fire department, whether it has salvage covers or not. The main requisite is that those attempting salvage use good judgment and do the things common sense dictates.

It is surprising how much one man can do with a single cover, or even without a regulation salvage tarpaulin, to protect furnishings and/or stock from damage during a fire. Most fire schools and colleges teach the "one man fold," and "one man throw." One man can carry two regulation 12 x 18-foot salvage covers on his shoulder for a considerable distance with little difficulty. Of course, a team of two men is better than a single salvageman, and two teams of two men, or a team of four men are better than a pair of good men, efficient as they may be.

In those departments which have self-contained, independent salvage

Sometimes manpower must be mobilized from wide areas to meet an extreme salvage emergency, as in this noteworthy Lansing State Office Building fire of February, 1951. For over thirty hours fire fighters poured water into upper floors of this fire resistive building while volunteers and regulars spread hundreds of covers recruited from fire departments and private industry over a wide area in an effort to protect invaluable records

companies or squads, manned by specialists whose duties are solely those of salvage, overhaul and reclamation, there will always be at least one team ready for immediate salvage operations upon arrival at an incident. The problem is more difficult where salvage work is done by fire fighters, and particularly where such operations cannot begin until firemen can be safely spared from fire extinguishing operations.

In some volunteer fire departments there may be a surplus of men on certain days and at certain times of the day. And at other periods there may be just the reverse.

As for full-time paid departments, there are few at present that possess sufficiently large crews to simultaneously attempt both rescue and fire extinguishing operations, and salvage. Under these conditions, salvage usually must wait. In some fires where conditions prevent interior attack, and water is applied in volume from the exterior of the involved structure, and where master stream appliances are used, there is usually sufficient personnel available to assist in salvage work.

To sum up: Actually, it is not material that salvage units be operated separate from the fire department, or that the salvage force should be an integral part of the fire department itself. As long as there is made available at the scene of the emergency requiring salvage, the necessary facilities of covers, and other equipment, and the men to utilize them to best advantage, the practice of performing salvage will do much to improve the department's relations with the public, and more, it will help make officers and men aware of the needless destruction wrought by fire. When firemen become salvage-minded, the practice of efficient salvage is assured.

Salvagemen Must Be Versed In Many Trades

Today, a vast amount of salvage is done by members of fire departments, as contrasted with separate Underwriters' salvage patrols and corps. And, in the aggregate, it is a safe conclusion that the majority of the salvage operations attempted by fire departments are performed by men whose primary function is fire extinguishing. In brief, it would appear that organized salvage therefore, still remains more or less of a sideline activity insofar as the majority of fire departments, paid and volunteer, are concerned.

This fact would appear to bear out the belief expressed by many fire fighters and salvagemen that the salvage specialist must be versed in many trades. He must not only know his fire fighting, but also its relation to salvage and in addition, he must be versed in the very broad field of salvage and reclamation itself.

As we have endeavored to show, the modern salvageman must know forcible entry and overhauling. He should be familiar with combustion, what makes fire propagate and extend, and the effect various extinguishing agents have on the different types of fire. No less than the fireman, he should know his buildings, and their occupancies, and particularly the latter, and what damaging effect fire, water and smoke may have upon the various classifications of occupancies. He should have more than a smattering of knowledge of ventilation, and the use of devices to accomplish it. And in addition to all these, he should be familiar with the tools of the firemen's trade, and how they are applied in fire attack, defense and rescue. He must know how to look after himself, exposed to possible dangers of unpredictable fire itself, and to the hazards resulting from the fire extinguishing efforts, such as building collapse, suffocation and drowning.

In practicing his calling, the salvageman will quite likely have occasion to fight fire—even to attempt rescue, no less than the fire fighter. But primarily, he must view fire extinguishing operations as a deterrent to efficient salvage. Every gallon of water

Continued on page 81

Milwaukee Journal Photo, Courtesy Milwaukee F. D.

Fargo, N. D., F. D. Photo

Salvage calls for physical stamina-plus. These illustrations attest the extremes under which salvagemen may have to operate at times. Left: Milwaukee patrolment working under "hot showers" during fire in Eagles Club in March, 1955. Note steam from hot water being squeegeed in effort to save costly floor and furnishings. Right: Arctic interior of lobby of Earle Hotel, Fargo, N. D., following fire in 1951. Extent of this fire and its severity were beyond fire department's salvage facilities to cope with it. Nevertheless, salvagemen labored in this sub-zero atmosphere to recover and reclaim all possible valuables

Chief officers of the New York Fire Department participate in radiological course. Lt. Keil demonstrates geiger counters

N.Y.F.D. Has Radiological Unit

Commissioner Edward F. Cavanagh, Jr., of New York City has recognized the hazardous situation resulting from the peacetime use of radioactive materials, as well as the potential catastrophic consequences of possible enemy action, by organizing a Radiological Unit as part of the New York Fire College which is commanded by Deputy Chief-in-Charge Thomas J. Hartnett.

A recent survey showed that there are in the City of New York approximately 400 establishments and institutions where radioactive materials are used in industry and in various scientific and medical activities. The Atomic Energy Commission gives information to the State Department of Health on shipments of materials and they, in turn, advise the fire department. A recent department order published the names and locations of places where radioactive situations might be encountered by the department in its normal operations.

The Radiological Unit is under the immediate supervision of Lieutenant Andrew A. Keil and consists of fifteen firemen who have recently received an intensive course of training in the fundamentals of atomic energy and radiological defense, under direction of Lieutenant Lewis H. Schwarz, USAFR, New York Office of Civil Defense.

A Radiac course has been established as part of the curriculum of the fire college and is now being given to the chief officers of the department, who attend in groups of twenty-five. The lectures and instruction are given by Lieutenant Keil and firemen attached to the unit. After the chief officers have completed the course, the company commanders will be brought in for indoctrination.

On days when Radiac classes are not conducted at the college, the Radiological Unit members lecture at company quarters and will continue the assignment until all members of the department have received the instruction in the handling of situations where radioactive materials might be involved, and in the protection of personnel as a result of such incidents. The unit will also visit all locations in the city where radioactive materials are used or stored, to determine and report on the conditions which may be encountered by the department in its routine operations.

Geiger counters have been assigned to the care of battalion chiefs and to the rescue companies. The division chiefs carry an ionization chamber in their cars.

While primarily an "every day" adjunct to the fire department, the Radiological Unit has a most important position in Civilian Defense. Receiving and plotting radioactive fallout data at the Control Center, this unit will be in a position to advise as to the proper location of fire lines and warn of dangerous radioactive areas.

New Edition of N.B.F.U. Building Code

The National Board of Fire Underwriters, 85 John St., New York 38, N. Y., recently announced the publication of the Golden Anniversary Edition of its Recommended National Building Code.

Revised many times since it first appeared in 1905, and completely so for the 1955 Golden Anniversary Edition, the code provides authoritative answers to a number of questions of wide current interest in the field of building design. For instance:

When is it proper to use glass and other light noncombustible panel walls in exteriors of buildings?

How should exceptionally large industrial buildings be constructed for reasonable fire safety?

The new code, according to the National Board, handles exterior building walls thus:

It makes their required fire resistance dependent on the amount of permanent open space between them and the nearest line to which a building is built or may legally be built. For exterior walls on a property line, a fire resistance of three hours is required and the total area of windows in such walls is restricted. As the distance from the lot line is increased, the fire resistance is lessened and the amount of permitted window area increased until a separation distance of 30 feet is reached. In which case, with certain exceptions, the walls may be without fire resistance rating, thus permitting them to be made entirely of glass or other noncombustible material.

For industrial buildings of exceptionally large area a separation of at least 80 feet is required from lot lines and construction is limited to that which is noncombustible. Sprinklers are required except for an occupancy which uses nothing but noncombustible materials.

Another problem of special interest in many parts of the country, and one on which the code gives newly-revised and expanded information, is how to construct buildings so as to minimize windstorm damage. This is handled by an appendix giving detailed suggestions on roof anchorage, attachment of roof coverings and other features of design.

Still another problem of wide current interest is: How may plastics be properly used in building construction?

The new code, in making provision for their use—with special provisions covering use in windows and skylights, and light-diffusing ceilings—relates their use to basic requirements on combustibility and flamespread characteristics as applied to other building materials and takes advantage of special conditions in which plastics may be used with little fire hazard.

The new code also allows larger increases in areas of buildings for installation of automatic sprinklers than have been recognized in previous editions of the code or in other building codes. These larger areas for sprinklered buildings were arrived at on the basis of the knowledge and experience of fire underwriters in evaluating the worth of automatic sprinkler systems.

Performance Code

Emphasis is placed on the fact that the National Building Code is a performance code and insofar as practicable, within the limits of public safety, allows for the use of any material, type of assembly, method of construction, or style of architecture that meets the required standards of strength, stability and fire resistance.

The National Building Code contains 16 appendices giving supplementary information.

One of the appendices most widely used contains a code covering the installation of heat producing appliances of all types, including air conditioning, blower and exhaust systems.

Another appendix contains a tabulation of fire-resistance ratings of walls, floors and other building parts. The tabulation is the most complete and up-to-date compilation of data of this type available. It may be used with any other modern code as all such codes contain requirements in terms of fire resistance rating.

THE WATCH DESK

overhauling the firemanic news of the day

Another Fatal Runaway Crash and Fire

Five persons were killed when a big tractor-trailer truck loaded with aluminum sheeting, lost its brakes and plummeted out of control down Big Savage mountain, into the outskirts of Cumberland, Md., Oct. 19th, where it crashed into a car and another truck, and burst into flames. Four of the victims, two men and two women, were occupants of the overtaken pleasure car. The other victim was the driver of one of the trucks.

Witnesses estimated the speed of the runaway truck was from 85 to 90 miles an hour. As it tore down the mountain its driver, Paul Stewart Myers, 25, of Dover, Pa., stuck with it but was unable to ditch it or stall it. Coming down the highway, it overtook and collided with the other truck, which was headed east. This vehicle was loaded with a bulldozer, and its driver, Samuel J. Brenneman, never had a chance.

The charging tractor-trailer struck the sedan, smashed over it, and dumped part of its load of aluminum sheeting on the twisted wreckage, then slammed into the other truck, decapitating its driver.

Fire, evidently caused by rupture of the sedan's tank, further added to the horror. It was some time before firemen were able to extinguish the blaze and remove the victims.

Nimrods and Women Fiddle As House Burns

From York, Penn., comes this tragic tale of "confusion worse confounded."

It concerns the nearby hamlet of New Salem, the farm home of one George Sheets, and a neighbor Mrs. Cleftus Bentz—not to speak of various assorted volunteer firemen and "telephone hogs"—mostly female.

Mrs. Cleftus Bentz saw smoke puffing from her neighbor's home Nov. 29th, last, and called the volunteer fire department at New Salem, about a mile away.

"I'm sorry," she was told, "but all the firemen have gone hunting." The Pennsylvania deer-shooting season opened two days before.

Mrs. Bentz' fire call had been taken by Harry Noss, who runs a gas station in the town, and acts as the "fire alarm office" for the local vamps.

Noss wasn't asleep on the job; just up against it for manpower. He figured he'd have to get somebody to the fire, so he tried to call the volunteer outfit in Jacobus, six miles distance. Parenthetically, be it said, the departments in that area have no mutual aid radio net.

Dispatcher Noss was stymied in this effort because he ran slap bang into two party-line telephone 'hogs', female species. They were holding their place on the 10-party line and intended to keep it.

Noss reportedly waited a bit, then tried again. The women were still talking (but not still) and still in no mood to yield, fire or no fire!

After another wait, this one lasting over 10 minutes, according to reports, Noss got through to West York, also six miles away. Here he got action,—but alas, too late.

When firemen finally got to the scene, the house was burned to the ground.

Tom Magner

Seniors Should Know Better

In Princeton, N. J., two Princeton University seniors, Charles E. Moore, 21, and Charles G. Stiles, 20, were fined $55 each last October and ordered to report to the Princeton firehouse every Saturday morning for the next two months, to perform whatever chores Fire Chief Charles J. Rocknak can think up for them.

Messrs. Moore and Stiles were accused of having tried to start a fire truck of a Saturday morning while the vehicle was parked on Witherspoon St.

They were unsuccessful in their efforts and were taken before Magistrate L. R. Gerber who sentenced them to repent at the firehouse "so that the fire station might increase your knowledge of fire engines."

To paraphrase the old motto, "let the punishment fit the crime."

Evers to Tinkers to Chance—and OUT!

You may remember the old baseball double-play couplet "Evers to Tinkers to Chance" . . . well, here's a Ripleyesque, if we ever heard one, that could read Toaster to Clothes to Washer Hose—and out!

City Councilman Robert Daubert, of Danbury, Conn., tells it as a true yarn. You be the judge. It's about a fire that could have amounted to something in the town, as fires go, but just got to hot for its own good!

The unusual blaze, Daubert says, didn't need the fire department—and did only about $150 to $175 damage.

It seems Mrs. Daubert placed some clothing on the kitchen floor alongside the automatic washer, of a Tuesday morn' before leaving the house, intending to wash them when she returned in the afternoon.

An automatic toaster, which had been left plugged in and which was set on top of the washer, apparently slid off during the day, fell upside down on top of the clothing and in the falling, tripped the switch "ON".

The clothes caught fire and the flames eventually burned through the hose which connected washer to water pipe.

Fortunately, the water valve was open from the pipe at the time, although the valve regulating the water's entrance into the machine was closed. Thusly, when the fire burned through the hose, it released a stream of water which shot out over the burning clothes, and blooie—extinguished the blaze.

Mr. Daubert arrived home about 4:30 P.M. and was greeted by a cloud of smoke when he opened the door. He investigated, and found the blaze had burned the clothing and the washer hose and in addition burned part of the kitchen baseboard and tile board. Smoke also damaged the wallpaper and ceiling of the kitchen and a part of the living room. "But it could have been a lot worse," said the Councilman, wiping his brow.

Thanks *Jim McDermott*

Hot Off the Tape

A fully loaded runaway oil truck crashed through a living room of a Chatham Township, N. J., home Dec. 2, pinning a 44-year-old housewife's foot to the floor for 20 minutes and cutting her small daughter with flying glass—and the truck and contents failed to catch fire. The victim, Mrs. Paul Winkler, who had been sitting on a sofa with her daughter, was rescued when a garbage truck hooked onto the 1600-gal. oil transport and pulled the front wheel of the heavy vehicle from her foot. . . . When the four-story Homer Gilbert poultry house burned in Rockland, Me., 19,000 hens were roasted. The Rockland Fire Department saved the farm home (thanks Brother Ruhlman). . . . A retired businessman of Hingham, Mass., was critically burned when his lighter fluid-spattered clothing became ignited. He refilled his lighter while sitting on the edge of his bed; some fluid spilled onto his sweater; his lighter failed to work and he used a match to boost it. It boosted—and he blazed. . . . Edward Bogardus, 24, a volunteer fireman, was held on arson charges in Media, Penn., Nov. 27, last, after allegedly admitting starting more than 30 fires that caused loss of $500,000. He is the son of the former Pennsylvania Secretary of Forest and Waters. He was arrested at the Swarthmore firehouse where he was hurrying to answer an alarm for a fire in a new $65,000 house, which was destroyed. . . . The Osceola, Ark., Fire Department has complained to the state attorney-general that a new factory on the outskirts of town is causing serious confusion. Seems it has a whistle that sounds exactly like the one used to muster the vamps! You can picture what happens! . . . Anyone in Montana who discards a refrigerator with its catches left on is liable for a $50 fine or a 30-day jail sentence under a new law just adopted by the state legislature.

short cuts and gadgets

An Aid to Barrack Evacuation And Fire Fighting

Here is an idea that rates top billing. It comes from Hugh F. Keepers, Foster Air Force Base, Texas, and it is designed to show new personnel assigned to the Base, the evacuation plan of their respective sleeping quarters, the inside and outside stairs, how to turn in a fire alarm and how to alert personnel in the building.

It seems that about eighteen months ago a fire fighter instructor at Foster Air Force Base came up with the idea for teaching evacuation and using the fire alarm system in barracks and buildings on the Base.

The old system was predicated upon blueprints showing the various openings, doors, location of stairs, etc., which a person might use in case of fire.

Carrying the idea further, after much thought, Hugh F. Keepers, instructor at the Base, decided to build a model that would more graphically demonstrate evacuation plans and procedures than the use of maps and printed instructions.

In July, 1954, Keepers began the work which meant duplicating the barracks on a three-quarter-inch scale. His model was completed after fifteen months effort and presented to the Air Force Base on October 8, last.

Overall measurements of the model barracks are: 30 inches width, by 52 inches length, by 18 inches height. The outside walls are made of plexiglass. The barracks set on a table top with the street, curb and lawn mounted as a unit. For the foundation the designer used a 1-inch balsa wood strip. It has 54 rooms and a hinged door for each room. There are 68 windows, each one constructed on a separate sash which can be moved up and down. The bottom and top sections are hinged to permit inside inspection. The windows are made of balsa wood and plastic glass.

The model has 36 light circuits supplied from a switch panel on a control board through a transformer (6 and 8 volts). In one room it has simulated fire, the effect being secured by use of a red light (6 volts) located behind a plastic wheel which is turned by a small 110 volt motor.

Small wooden extinguishers are located along the hallways. They are painted red and represent 2½-gallon water extinguishers. The model has 12 exit lights which operate off two dry cell batteries, controlled by the master switch on the control panel. Each porch, there are five in all, has a one-quarter inch chrome porch light which also works from the master control panel on two dry cell batteries.

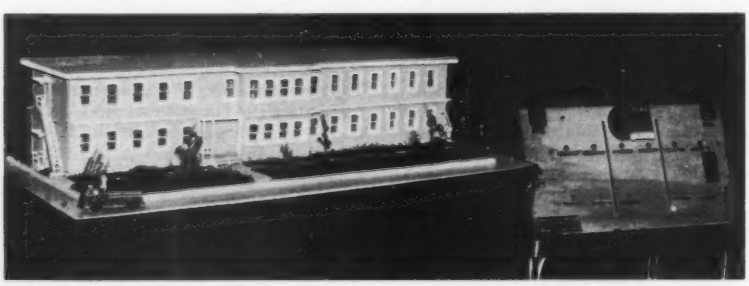
Also controlled from the master control board is what is known as a smoke room. This room has a toaster coil 2½-inches square running off 20 volts, with two red light indicators. When the switch is turned on, the coil heats up four small smoke pellets which are placed on the coil before the demonstration. Plenty of white smoke is developed by this hookup. This feature can be used to show fire fighting crews how to ventilate.

Raising the hinged roof permits the students to observe the interior layout and construction of the second floor, or the second story and roof section can be raised to permit inspection of the ground floor and stairways.

The model barracks are painted gray and white. To the left side of the building is a telephone pole on which is mounted a pilot light and phone box.

When the smoke comes out of the windows, the heat from the coil sets off an alarm system which activates two red lights about 2 inches in diameter bearing the word "FIRE" and at the same time sets off a warning bell.

The control box (and panel) measures 24 inches in height by 26 inches in width at the bottom. At the bottom, it is one foot wide and at the top it is 4 inches wide. There are two pilot lights and a double outlet for 110 volts on the right side. It has a spark coil which has been built into the batteries. There is also a Model T coil to set off the demonstration explosion chamber. The back folds up to make an electric board of 110 volts.



Model of Foster Air Force Base barracks used to put over the fire prevention message

We are told some 5,000 men, women and children have witnessed the one hour and fifteen minute show given over a period of four months. The barracks are shown in connection with the show called the "Table of Hazards."

"Map Happy Firemen"

This'un was clipt from the Boston Herald but it's about the vamps of DeKalb County, Georgia, down Atlanta-way. We quote:

"A sign of the population shifting of the times is the way everyone of the more than 100 firemen in DeKalb County, Georgia, now comes to work by one route and goes home by another.

"This is part of a program of continuous training in the county's Fire Department so that it can keep tab on changes in the community caused by the great American trek to the suburbs. The fast growth of the county—where 4000 new dwellings went up last year—is said to make it essential that DeKalb firemen keep on their toes to prevent fire hazards as well as to know exactly where to go in case a fire breaks out.

"The Fire Department has a master map of the county, and every time a new subdivision of street is approved, the Department is notified and brings the map up to date.

"There is also a card index file that keeps check on the 1800 streets in the county outside the cities of Atlanta and Decatur. Each card gives details on the location of a given street and notes other streets of the same name. The file also tells location of schools and of every lake and pond—in case of drowning accidents when fire resuscitators are needed. In addition, the cars of the fire chief and his assistants have this same information in their special files, built into the floorboards!

"By day—from 1 to 2 p.m.—each fireman spends time studying maps, as well as use of fire-fighting equipment.

"They have even invented a memory game to sharpen their ability to recall locations of buildings, streets and fire hydrants. For instance, one man will draw an unnamed street and then fill in and identify the streets that run off it, until someone finally identifies the 'mystery' street."

New Use for a Helmet!

Battalion Chief A. D. Marable of the Dallas, Tex., Fire Department, found a new use for his fire helmet recently, when he helped evacuate 20 residents from a burning rooming house early on Nov. 30.

When shouts failed to arouse a 45-year-old deaf mute woman, he awakened her by shaking her. Unable to make the terrified woman understand his warning Chief Marable finally took off his fire helmet and flashed his light on the lettering.

"She got the idea fast," Marable said. "She grabbed a robe and ran out then."

If quick thinking may be called a "short cut"—Marable took it.

Thanks to Tom Magner

"Our Department has used EUREKA Multiple-Woven for 35 Years!"

That's the report of one Fire Chief*, who goes on to explain, "It was a simple case of economics. We had to *stretch* our hose dollars. And our experience had proved that the *best* hose was actually most economical in the long run.

"The way I figure, it would have cost us at least 50% more to keep the department in short-lived, minimum-priced, 'approved' hose. And we wouldn't have enjoyed the feeling of greater safety and confidence that we get from Eureka Multiple-Woven Hose. Believe me, that's worth a *lot* when lives and property are at stake!"

Eureka Multiple-Woven is the unique fire hose in which *all plies* are circular woven *simultaneously* into one homogeneous jacket. There just isn't any space between plies to harbor water or dirt. That's why it stays serviceable, safe and dependable so much longer! Let the Eureka man tell you why your department or volunteer company can *save* by standardizing on *the best!* And you'll have the added satisfaction of dealing with a fire hose specialist!

*Name on request.

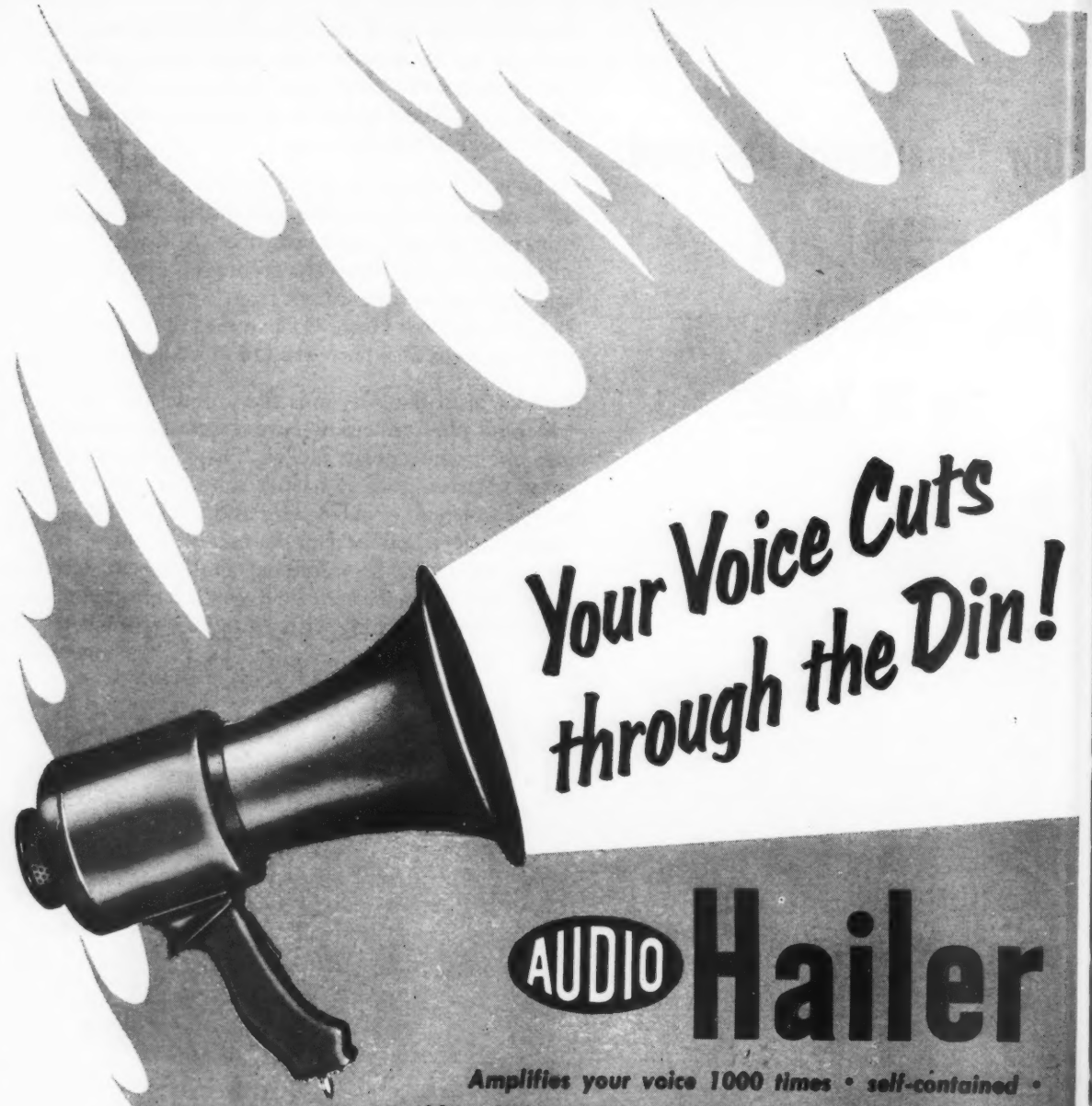
Note how criss-crossing vertical cords tie all plies into a single jacket.

"For greater protection to life and property"

EUREKA FIRE HOSE

Since 1875, Specialists in Manufacturing Circular-Woven Rubber-Lined Fire Hose

195 Hudson Street • New York 13, N. Y. *Division of* United States Rubber



Your Voice Cuts through the Din!

AUDIO Hailer

Amplifies your voice 1000 times • self-contained • portable • light-weight • battery operated • weather proof

In emergency and rescue work, Audio Hailer gives a fire-chief the power to speak *directly — instantly — to every one of his men* — over the din of a fire. Apparatus and equipment can be shifted — manpower can be re-deployed — sudden perils can be averted — without a second's delay.

Experienced fire fighters call Audio Hailer "*the most useful single piece of equipment in the house*". Ask your supply dealer for a demonstration. Or write for brochure.

AUDIO EQUIPMENT CO., INC., 805 Middle Neck Road, Great Neck, N. Y.

WHAT'S NEW

Among the Manufacturers

- products
- processes
- personalities

Glen Alden Acquires Ward LaFrance

The Glen Alden Corporation, producer and marketer of anthracite and air conditioning equipment, has completed arrangements for acquiring the Ward La-France Truck Corporation, it was announced recently by Francis O. Case, president.

Ward LaFrance, a leading manufacturer of fire apparatus and emergency rescue cars, will be operated as a subsidiary of Glen Alden. Joseph G. Grossman will continue as president and F. Norman Tracy as vice president and general manager.

Mr. Case reported that Ward La-France does an annual business of about $9 million and earns slightly less than 10 per cent on sales before taxes. He pointed out that Glen Alden did not anticipate tax liability in the foreseeable future in view of its tax loss credits that can be carried forward.

"The acquisition of Ward La-France," Mr. Case stated, represents another important step in Glen Alden's plans to broaden the base of its operations to include businesses outside the anthracite industry. Mr. Case reported that the acquisition earlier this year of The Mathes Company, air conditioning manufacturer, was the company's first move toward greater diversification of interests.

Mr. Case stated that the acquisition would be financed out of cash and future earnings.

The company's line of fire apparatus and rescue cars are sold to municipalities, industrial firms, and various agencies of the Federal government. In addition, it makes special commercial vehicles sold to large cities and industrial firms. All of its manufacturing operations are conducted at its plant in Elmira, New York, with a sales and service branch in New York City.

FWD Appoints Representatives

Four manufacturer's representatives have been appointed by Four Wheel Drive Company, Clintonville, Wis., as agents for the sale of FWD fire apparatus in Pennsylvania and North and South Dakota, it was announced by C. H. Welch, FWD fire apparatus market manager.

The representatives are Joseph B. Winder, 27 North Hills Avenue, Willow Grove 9, Pa., for Berks, Lehigh, Northampton, Bucks, Montgomery, Chester, Delaware and Philadelphia Counties in Pennsylvania; H. G. Muehlhof, 422 West Front Street, Berwick, Pa., for the counties of Lycoming, Sullivan, Wyoming, Lackawanna, Luzerne, Carbon, Schuylkill, Northumberland, Snyder, Union, Montour and Columbia, Pennsylvania; R. C. McCormick, McCormick Fire Equipment Co., 1465 Sylvan Terrace, Wilkinsburg, Pa., for the Pennsylvania counties south and west of, and including, Lawrence, Butler, Armstrong, Indiana, Cambria and Somerset; and the Dakota Fire Apparatus Sales Co., 213 West 10th Street, Sioux Falls, S. D., for all of North and South Dakota.

Previously, FWD fire apparatus, including pumpers, aerial ladder trucks, tank trucks and other equipment was sold entirely through dealers.

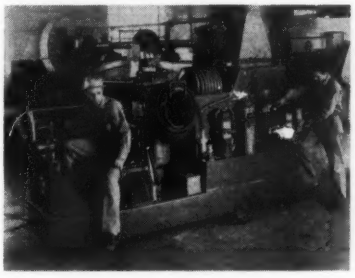
Federal Sign and Signal Corporation Featured on Television Program

William W. Scott, President of Federal, outstanding producer of visual and audible signalling devices, was interviewed recently on a special TV program "This Is the Midwest," produced "live" from Chicago over station WBBM-TV. Each week this half-hour show focuses its attention on a leading midwest industry. Shown here on the set, left to right, are: Fahey Flynn, narrator of the program and well-known Chicago CBS news commentator; Mr. Scott; and Thomas H. Coulter, Chief Executive Officer of the Association of Commerce and Industry. The program explored the various applications of Federal's visual and audible signals in industry, municipalities, the government, and the Armed Forces in the process of manufacture and operation through a documentary motion picture.

O'Brien Becomes G.S.M. of ADT

American District Telegraph Company (ADT System) has announced that Laurence J. O'Brien will assume the position of General Sales Manager on January 1. Mr. O'Brien, son of the late John P. O'Brien, former Mayor of New York, is a graduate of Georgetown University and the Fordham University Law School. Prior to his association with ADT, which specializes in electric protection against fire, burglary and holdup, he was a sales representative with International Business Machines.

Plant Units by Ansul



Introduction of a line of easily maneuverable in-plant fire trucks has been announced by the Ansul Chemical Company, Marinette, Wis. Designed to carry a wide assortment of fire fighting equipment and especially adaptable to the needs of plant fire brigades, the trucks are being manufactured by St. Clair Industries of Detroit, Mich. They will be distributed exclusively through the Ansul sales organization.

Employing a Kalamazoo chassis, the trucks are available in six basic models. The KB 8 Model, featuring a 300 lb. Ansul dry chemical unit backed up by a 150 gallon water fog system, is expected to find the widest application in industry, according to Ansul officials. Other units utilizing dry chemical-carbon dioxide combinations, water fog-carbon dioxide combinations or solely water are available, depending on the types of hazards to be protected. These units are offered on either a three-wheeled 42 inch wide chassis, suitable for in-plant use, or a four-wheeled 48 inch wide chassis with more road clearance and a larger engine for indoor-outdoor use.

The 300 lb. Ansul dry chemical unit comes equipped with 100 feet of hose and a Dualstream nozzle. The pump of the 150 gallon water fog system is driven through an exclusive power take-off by the 14.6 hp Wisconsin engine which powers the truck. This makes possible

Continued on page 75

FALSE ALARMS

Retaliation

A man swaggered up to the bar and said for all to hear, "Everybody listen here, I'm buying the drinks."

"Does that include me?" asked the bartender.

"Sure, drink up, said the customer.

After everybody had downed their drinks, the bartender said, "That will be $15, sir."

"I'm broke," said the man; "—ain't got a dime." With that, the bartender hit the man across the face with his bar rag and tossed him out of the bar.

Next day, the man returned, walked up to the bar and said, "Everybody listen here, the drinks are on me."

"Me, too?" asked the bartender.

"No, yelled the customer, "you get mean when you get drunk."

The Cure

"How did you stop your husband from staying out late?"

"When he came in too late I called out, 'Is that you, Jack?' "

"How did that stop him?"

"My husband's name is Bill."

Chagrin

An embarrassing situation marked the passing of a well-known fire chief. And none of the members of his family have spoken since the funeral to any members of his engine company. For these firemen, while well-intentioned, committed the unpardonable sin of sending to the wake a huge floral tribute inscribed in gold letters—GONE TO HIS LAST FIRE.

—*A. M. A. Journal*

Why Fire Engines are Red

During a question period following a lecture a man arose and put a foolish query to the speaker. The latter replied:

"The logic of your question makes me think of another. Can you tell me why fire engines are always red? You can't. Well, fire engines have four wheels and eight men. Four and eight are twelve. Twelve inches make a foot. A foot is a ruler. Queen Elizabeth was a ruler. The Queen Elizabeth sails the seven seas. Seas have fish. Fish have fins. The Finns fought the Russians. The Russians are Red. Fire engines are always rushin'. Therefore, fire engines are always red. I hope this answers your question also."

Office Boy. "Please sir, I think you are wanted on the phone."

The Chief: "What do you mean, you think? Aren't you sure?"

Office Boy: "Well, the voice said: 'Hello, is that you, you old idiot?' "

Natural Error

A drunk hastened to apologize for throwing his arms around a strange woman met in the street. "I thought you were my wife."

"You're a fine husband for any woman to have, you sot!" she screamed.

"There, y'see," said he triumphantly, "you not only look like her, but talk like her!"

"Tell me," gushed the inquisitive matron, "do you ever do anything in the nude?"

"Well, madam, replied the artist, "occasionally I take a bath."

Answer To Our Critics

It's tough to find
For love or money,
A joke that's clean
And also funny.

Paradise Lost

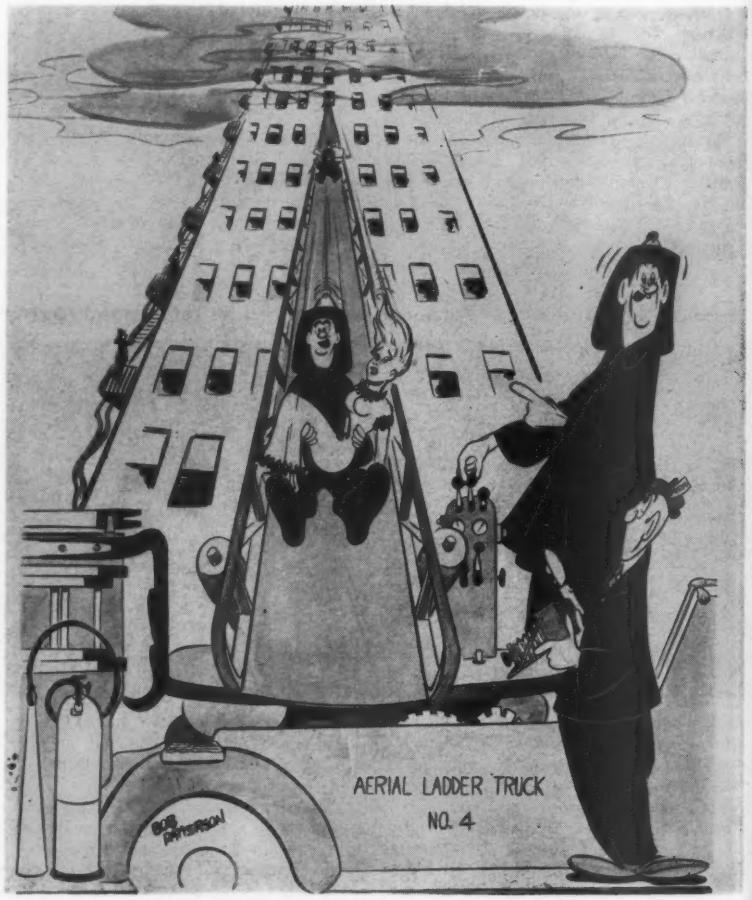
This classic, which has gone the rounds over the past years, is worth reproduction

—EDITOR

When I sat at the wheel of the fire-chief's car
I could drive like a streak of light;
And not even the traffic cop could bar
The course of my headlong flight
For the fire-chief's car had the right of way,
And it laughs at the speed laws too;
And the motor cops hadn't a word to say
When I used to go whooping through.

Oh Lord, it was great when my siren sang
And the traffic would let me by.
And I laughed as I drove with a zip and bang,
With the lever locked in high.
But now I'm in a private job,
It seems like I have to crawl;
And drivin' a car has lost its throb,
And it isn't no fun at all.

For I've got to stop for the traffic cop;
And the motor cop says: "Hey!"
"I'll summons you into court, Old Top,"
"If you hit it up that way!"
And I'm blocked by trucks, and by flivvers, too;
And it sure does rasp and jar
On the nerves of a guy who once shot through
At the wheel of a fire-chief's car.



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You too will agree—finest nozzle of its type

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★ High gallonage

★ Easy pattern indicators

★ Akron quality ball shut-off

★ Man-size handle

PERFORMANCE DATA
at 100 P.S.I. Nozzle Pressure

STYLE	SIZE	NARROW FOG GPM
1209	¾" - 1"	24
1218	1½"	95
1219	1½"	125
1229	2½" for PP	250
1239	2½" Dir. Con.	250
1249	2½" with PP	250

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Among the Buffs

By Paul C. Ditzel

IT WAS A WISE COPYREADER who said that a doctor buries his boo-boos, but when a writer's omissions get into print, the whole world gloats. Recently I made the mistake—I admit I should have known better from past experience—of mentioning a new plastic gadget.

The contraption I innocently described was a miniature fire helmet-shaped pencil sharpener. What I failed to mention, perhaps because of a certain space consciousness, was the address of the firm. Consequently, I've found myself in the unhappy position of minister without portfolio for the Bachmann Bros., Inc., company, 1400-1438 East Erie Ave., Philadelphia 24, Pa. (There, I've given the address, so get off my back!)

As soon as the column appeared the mailman began delivering inquiries about this gadget. The trickle soon became a river and finally a deluge, thus making me somewhat envious I hadn't thought of the gadget before Al Redles, secretary and director of sales for the company told me about it.

One of the most interesting of the inquiries came from Dr. E. H. Parizot, assistant chief, medical administration of the Pearl River, N. Y., Fire Department.

"One of our assistant chiefs here in the local fire department hit upon a novel idea of using these helmets for a roster board," writes Dr. Parizot. "They have made a board for one of the companies and had quite a bit of difficulty getting enough for that company and find it impossible to get any more.

"The white helmets are used for the chief officers and (the other color) is used for the personnel of the company."

When on duty the firemen's hats are in place on the roster board hooks and the name of the man is on the lower part of the hat. The various colors denote rank and each man's assignment.

Among other inquiries were those from Melvin W. Titus, 49 Cornelia St., Plattsburgh, N. Y., instructor in the Clinton County Fire Advisory Board, Division of Fire Training and one from Tom Magner of the Bridgeport, Conn., *Post* who is no stranger to readers of FIRE ENGINEERING.

Tom lays claim to being the oldest writer in service for this magazine with 40 years of experience as New England correspondent.

Brother Redles, who started all this by sending me two complimentary helmets, is himself an intrepid buff and chronicler of fires happenings. Al carries a notebook with him at all times in which he registers every alarm he's taken in. His response when he wrote several months ago was 22,095 since 1925 and includes an alarm in London, Paris and Bonn, Germany.

Al recently returned from an extensive trip through the Continent and also kept a journal of his wanderings. Of interest to buffs are his comments on the London Fire Brigade:

"They are very much sold on the idea of using the telephone to send fire alarms . . . and now have only about 400 fire boxes in use," he said.

"They have 58 stations and call the equipment appliances. Three appliances usually respond on an alarm and do not respond with chiefs. The equipment obeys all traffic speeds both going and returning, using only a small bell, no sirens. While the equipment is two-way radio equipped, they do not return the companies, but rather go through to the call because they are running shorthanded, some going to fires with four men."

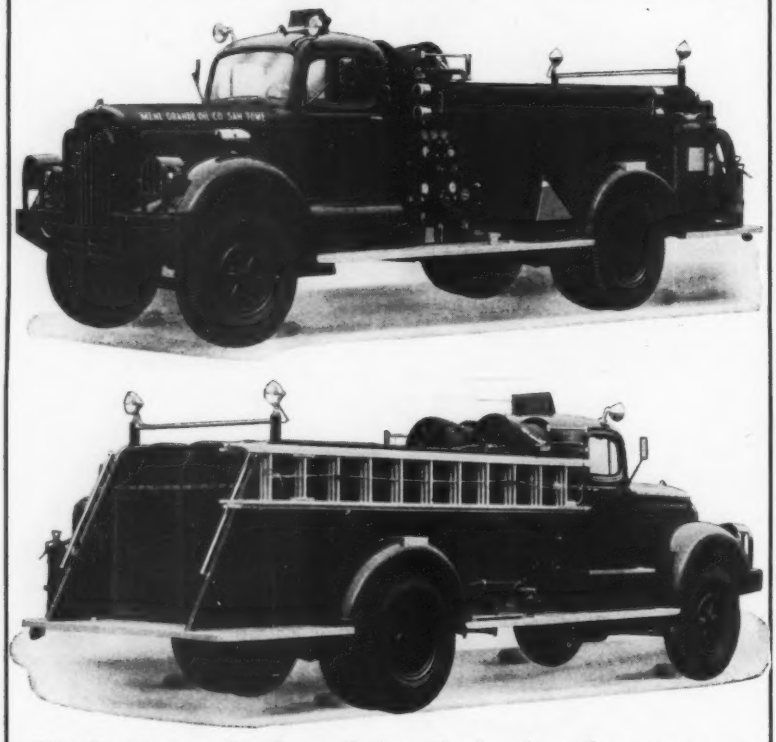
While some persons might be inclined to think that we in the United States know all there is to know about this exacting science of fire fighting, Brother Redles admirably sums up the London Fire Brigade's problem during the war:

"The two special films they permitted me to see are beyond human belief . . . they had 90 straight nights of bombing and each night's fires had to be controlled before the next night came, so they would not be a torch for the enemy to follow. Truly a great fire brigade."

During the blitz London had 3000 fire calls per night and on one night from fire bombs alone they had 1100 fires with about 25,000 personnel in the fire service. Today, London averages about 22,000 alarms a year.

Among the many Christmas cards from buffs and their clubs I'm happy to receive every year was one in particular from

Built for Heavy Duty Service In The Oil Industry



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If you have special fire protection problems you can call on us for recommendations, specifications, quotations. We will follow your requests and suggestions faithfully and you will be proud to accept delivery of your new Champion Fire Apparatus secure in the confidence that the unit will perform capably and serve well to protect your employees and property.

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AT YOUR SERVICE: Sales and Service Representatives—East, Midwest, North, South

the Friendship Fire Association which warrants a letter if I had their address. Secretary John Lee Turner, in addition to writing a note making some encouraging remarks about this column also said, "I guess it must seem like a thankless job at times." When I read that friendly greeting, I almost felt that Brother Turner was looking over my shoulder when I open the mail. Letters like that take the edge off some I get like the poison pen scribblings I receive from an obviously insane individual every time I mention the name of Chief John Alderson and his courageous efforts on behalf of the fire service in general and the men of the Los Angeles Fire Department in particular.

Until the bells go down again next month, I remain here at 419 Napoleon Street, Playa del Rey, Calif. I'm writing this a week before Christmas and by the time you read this column your only memory of the holiday will be the incoming bills. Anyway, holiday greetings to all of you.

L. A. Industrial Fires Cripple 6 Plants

Three major loss fires during a three week period in Los Angeles crippled six industrial occupancies and caused damages estimated by owners at more than $850,000. Although all three blazes were in somewhat close proximity to each other, it is doubted whether they had any connection.

Most severe of the fires occurred early November 16 in a two-story, 46-year-old building at the northeast corner of Central Avenue and East 32nd Street. The 100 by 300 foot brick building housed the Nehms Co., cardboard box factory; the City Carpet Dyers, Inc., and the California Carpet Company.

Five firemen were injured in the predawn blaze when walls collapsed or were pulled down by firemen.

Assistant Fire Chief Ronald T. Robertson who commanded 15 fire companies reported, "It looks as if the fire started on the first floor in the dyeing plant, but we haven't been able to determine the cause yet."

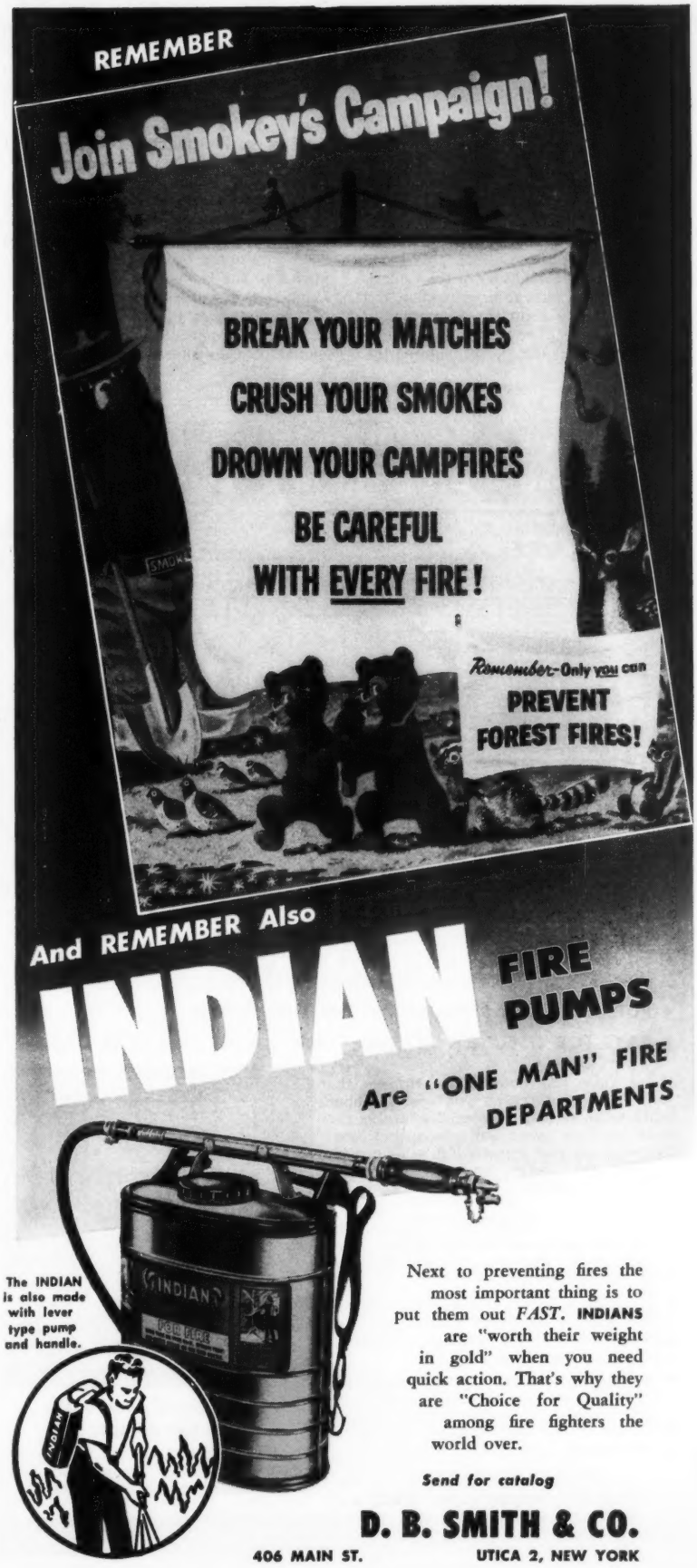
Officials of the concerned companies estimated their losses at more than $600,000.

The second major loss, also in a carpet occupancy, caused an estimated $150,000 damage, October 24, to the plant of the Main Stay Rug Manufacturing Company at 1634 S. Main Street. Heaviest loss occurred in the rear storage area where the fire is believed to have started.

Two East Side plants were partly destroyed, November 2, when flames caused an estimated $100,000 in damage to the Solomon Mill Supply Corporation, 1005 Mateo Street and the adjacent Plasti-Chrome Corporation. A cafe also was lost.

More than 2000 bales of rags and paper were destroyed in the fire fought by 12 fire companies under Assistant Chief Earl Richardson. Two large trucks also were ruined in the Solomon yard.

Paul Ditzel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Persons in the News

T. J. Hartnett Heads N.Y.F.D. College

Fire Commissioner Edward F. Cavanagh, Jr., has assigned Deputy Chief-in-Charge Thomas J. Hartnett as Commander of the Fire College, this being the first time in the history of the College that an officer trained in education has been selected to head the Department's Training Division.

Chief Hartnett, who is 43, entered the Department in 1936 after graduating from Fordham University in 1934 with a B.A. degree, having majored in Pedagogy. Chief Hartnett was promoted to Lieutenant in 1941 and in 1943 entered the U. S. Navy with commission as Lt. (jg) in the Fire Fighters Group, the unit assigned to train Navy personnel in fire fighting.

In 1944 Lieutenant Hartnett was sent to France where he was put in charge of fire fighting for the Port of Rouen. On his return to the United States he was assigned to the Navy base at Mare Island, Calif., as executive officer of the Fire School. Returning to the Fire Department in 1946, Lieutenant Hartnett was promoted to Captain in 1948 and put in command of Engine 21. He was promoted to Battalion Chief in 1951, and on January 1, 1954, was advanced to Deputy Chief. On April 15 of this year he was appointed Deputy Director of Civil Defense, the position he left to assume command of the Fire College on his promotion to Deputy Chief-in-Charge.

Irwin Named N.Y.F.D. Repair Shop Head

New York City Fire Department has a new commanding officer in charge of its apparatus repair shops. He is Captain Harry M. Irwin, an Acting Chief of Battalion. He had been Chief Supervising Engineer for several years He responds to all major alarms. He is an automotive, mechanical and hydraulic engineer. Before he came to the Fire Department, he had spent eleven years in the shops of several nationally known automobile manufacturers. His father was a signal engineer on the old IRT subway system.

Chief Irwin has, in addition to the combined qualities of mechanical and automotive experience, the attributes of smoke eater in some of New York's busiest blaze beating units, such as Rescue 3 and Harlem, and Bronx fire fighting companies.

Jerry Daly

Boston Advances Five Chiefs

Five permanent assistant chiefs have been named by Boston Fire Commissioner Francis X. Cotter and confirmed by Mayor Haynes.

Those promoted are: Deputy Fire Chiefs William A. Terrenzi and John E. Clougherty; also assistant fire chiefs Leo C. Driscoll, Patrick E. Collins and Edward N. Montgomery.

The latter three have been functioning in temporary status. Terrenzi and Clougherty each will command two of the department's fire fighting divisions. The other three retain their original assignments—Driscoll in charge of personnel, Collins in command of fire fighting at headquarters, and Montgomery in charge of the fire prevention division.

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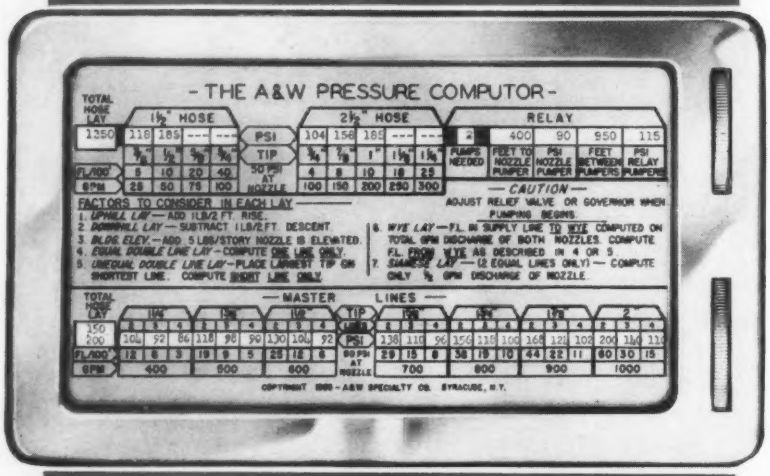

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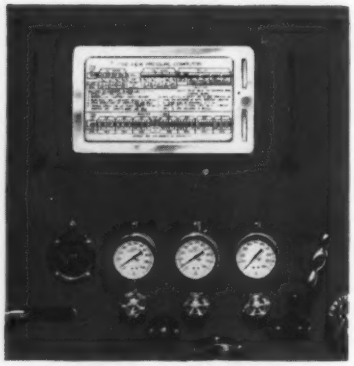

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Chief Flores Resigns Post

Fire Chief Walter J. Flores recently submitted his resignation as head of the Allentown, Pa., Fire Department and executive director of the city's Civil Defense organization. It became effective December 3, 1955.

Chief Flores, a veteran of more than 27 years service with the fire department, and its chief for the past six years, has been outstanding in advocating progressive policies and procedures in fire protection and prevention.

It is reported that he will accept a position in private business after the first of the year.

In announcing his retirement, Chief Flores thanked the members of his department, and the many local citizens who have been active in their efforts to persuade the city to retain him as head of the department.

Alderson Suspended, Reinstated; And Then Resigns

Chief Engineer John H. Alderson, one of the most honored fire chiefs in the history of this nation's fire service, was suspended by the Los Angeles Board of Fire Commissioners on December 15, two weeks before his announced intention to retire.

The suspension climaxed a bitter two year battle instigated by outside political and minority pressures to force complete racial integration in the Los Angeles Fire Department.

On December 29, the Fire Commission withdrew the charges against Chief Alderson and ordered an end to his prosecution. Thereupon he asked for, and received, his retirement.

The commission's 4-1 vote to suspend Chief Alderson was followed by the naming of his close associate, Deputy Chief F. H. Rothermel, to serve as acting chief, pending the outcome of a Civil Service examination to determine Chief Alderson's successor. Chief Rothermel said he had no intention of reversing any of Chief Alderson's policies, nor would he seek the vacant post.

The lengthy integration battle in Los Angeles was described in detail in the November, 1955, issue of FIRE ENGINEERING.

Chief Alderson's $10,000 annual pension was not in jeopardy as a result of the commission's suspension.

The commission's complaint, signed by its president, G. William Shea, charged:

1. That Chief Alderson refused to comply with a recent commission order that he instruct all firemen to cooperate with a special investigator appointed by the board to delve into the integration problem.

2. That he defied the board's integration policy by transferring all integrated Negro firemen back to all-Negro stations.

3. That he refused to discipline firemen for acts inimical to the integration of Negroes into white companies.

Commissioner Robert A. Day, only dissenting commission member, said in argu-

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ing against the complaint: "What good will this do anyone? I take it this is like kicking a man when he's down. I see no reason for it at all. I'm opposed to it. . . .

"After 30 years of service and a clean record I see no reason at the end of his career for this implied insult. . . . We're dealing with a human."

Chief Alderson, when handed a copy of the complaint, said:

"I ask the board to remember that the prime responsibility of the Fire Department is not to integrate Negro with white men, but to protect the lives of 2,000,000 people and $2,000,000,000 worth of property."

President Shea said the board is "not oblivious" to that responsibility. Earlier, Shea replied to Day's arguments that Chief Alderson despite his public announcements had filed no application for retirement and in a letter to the commission refusing to carry out the December 8 order had "made the statement that the issue should be drawn."

Chief Alderson said the order relieving him from duty was illegal in that it was not based upon any violation of the rules and regulations of the Fire Commission.

"Under the City Charter," he said, "they must cite violations of their own rules and regulations, but this was not done."

As described in the November issue of FIRE ENGINEERING, public confusion in Los Angeles over the issue gives the impression that Chief Alderson obstinately balked integration. Actually, he instituted a program of integration and the kernel of the issue seemed to be the speed with which complete integration should come about. The National Association for the Advancement of Colored People and other vocal groups insist for sweeping integration movements, a stand which Chief Alderson and nearly all of the men of the department have been equally adamant in fighting.

Chief Alderson has long been the target of smear tactics by his enemies, running from anonymous telephone calls and mail threatening him, his wife and family, to persons tampering with his automobile.

"My wife keeps the curtains down at all times and won't let me go near the windows. Three times in recent months we've had our telephone number changed because of the threats and obscene phone calls."

Typical of these was one signed "Nemesis" and mailed to the Behrens Memorial Hospital while Chief Alderson was undergoing treatment for a gall bladder ailment.

"You will live to see the whites entirely submerged," said the letter. "We have become too strong for you. It is hoped that you will not survive your operation."

Chief Rothermel's appointment as acting chief brought an immediate blast from the NAACP as was to be expected.

Chief Rothermel is in his 44th year with the department. He is 65 and began his career Sept. 14, 1912, in the old fire headquarters building. He became a lieutenant in 1924, captain in 1927 and battalion chief in 1931. Chiefs Rothermel and Alderson became deputy chiefs at the same time in 1940.

Paul Ditzel

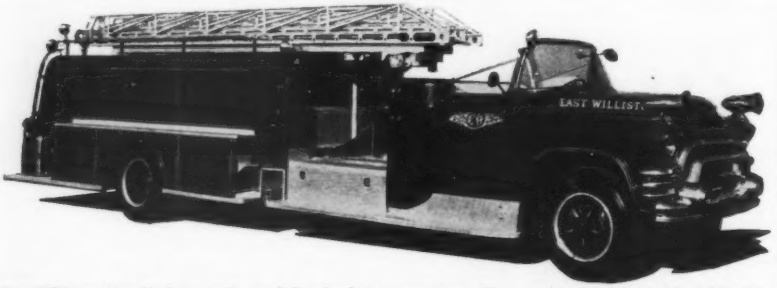
Danbury Blaze Gives Fire Fighters a Workout

Firemen at Danbury, Conn., spent all night on Dec. 11 battling a blaze which destroyed a two and one-half story brick and wood frame building which housed the Hilltop House Restaurant, and four dwelling apartments at 67 Lake Avenue, just outside the city lines.

The blaze was discovered shortly after 10 P.M. and kept fire fighters at the scene until 6:55 A.M. the following day. Abdoo Abraham, owner of the five-year-old building, said the replacement cost would reach $100,000. Residents of the four apartments lost practically all but the clothes they were wearing when they fled from the building in 20-degree weather.

Route 6 out of Danbury was blocked most of the night as firemen from almost all the regular and city and town volunteer companies fought the blaze. Fire Chief George C. Hanna, of Danbury, who directed firemen at the scene, said the blaze apparently started in the restaurant and worked its way through insulation and air spaces over the first floor ceiling to the rear of the structure and up through the partitions. Chief Hanna turned the investigation over to the State Fire Marshal's office.

Tom Magner



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Obituaries

Chief J. F. Moroney Dead

John F. Moroney, retired Chief of the Meriden, Conn., Fire Department, died in his home in that city on November 26 following a long illness. He was 78 years of age.

Chief Moroney was retired in 1947, after serving 40 years in the Meriden Department. He began his career in 1907 when fire fighting equipment in Meriden was horse-drawn and he witnessed the gradual transition to modern techniques in his field, including advanced fire fighting apparatus.

Chief Moroney was born in Meriden on May 21, 1877, and was a life-long resident there. On January 1, 1907, he was named a substitute fireman and assigned to Chemical Company No. 2. In 1908 he was appointed a callman, and two years later received appointment as a permanent man.

He was named a captain in 1912, and was promoted to Chief of Department on January 1, 1933. He was elected president of the Connecticut Fire Chiefs' Club in 1941, and was a member of the New England and International Associations of Fire Chiefs. Fraternally he was a member of the Meriden Lodge of Elks.

Besides his wife, Chief Moroney is survived by two sisters, Mrs. Margaret Hopkins and Mrs. Catherine McCarthy, both of Meriden; three brothers, Michael and Patrick Moroney of Hartford, and Jeremiah Moroney of New Haven; also several nieces and nephews.

Tom Magner

Asst. Chief A. Heinzman Dead

Adolph Heinzman, one of the pioneer leaders of the Los Angeles County Fire Department, died recently at the age of 72.

A fireman with the Los Angeles City Fire Department, he became a battalion chief in the infant L. A. County F. D. on November 24, 1924.

On May 14, 1931, he became Assistant Chief in charge of the department's Fire Protection Districts.

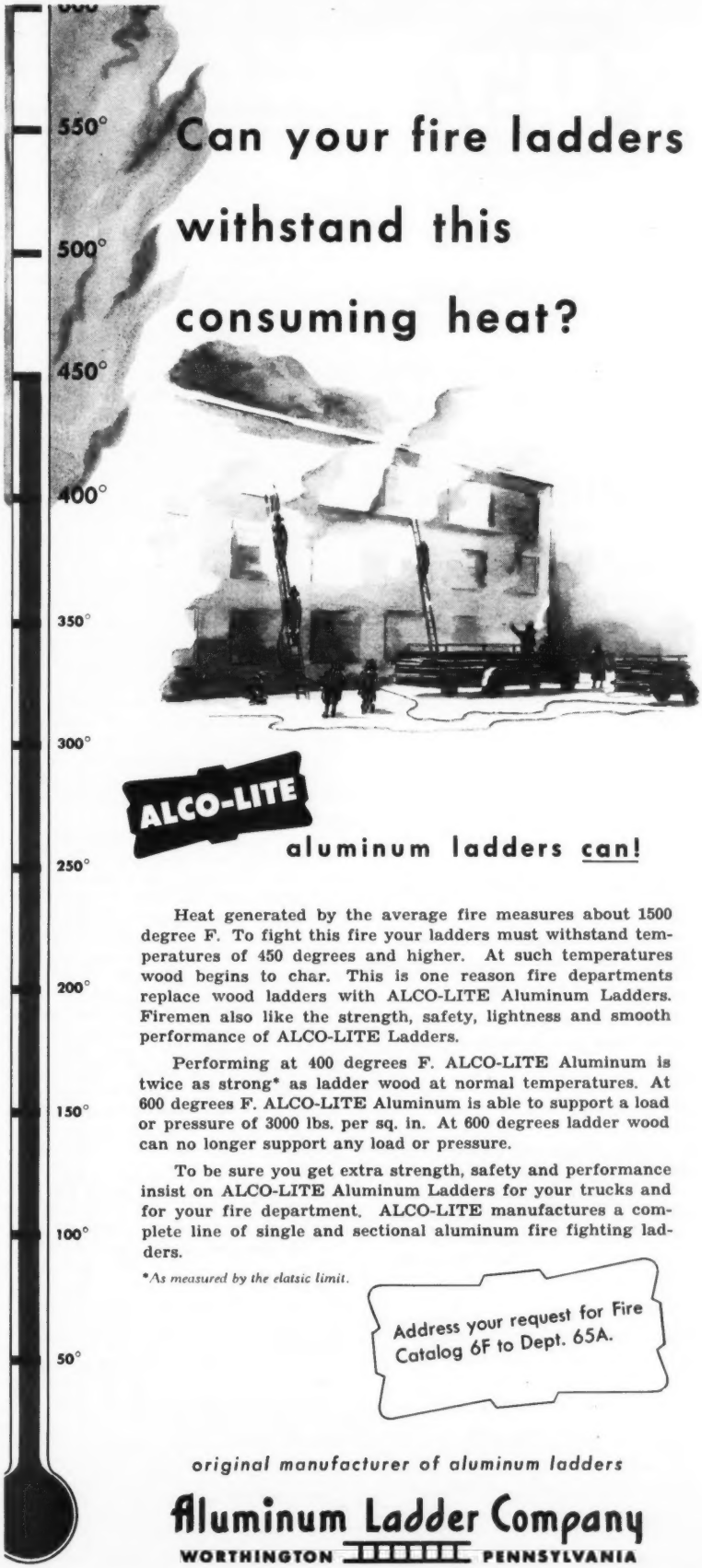
Chief Heinzman retired September 1, 1945.

Cliff Dektar

Chief T. J. Furey Dead

Thomas J. Furey, 63, Chief of the Thompsonville, Conn., Fire Department, former president of the Connecticut Fire Chiefs' Association, and veteran employee of the Bigelow-Sanford Carpet Company, died in his home on December 9, following a long illness. Chief Furey had been a member of the Thompsonville Fire Department for 42 years, and Chief since November, 1938.

Tom Magner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Questions and Answers

wherein are answered questions relating to current problems in the fire protection

High Jumps at Fires

To the Editor:

During a discussion in the firehouse, a story was told that has us all wondering. While talking about life nets, one of the men claimed he read about a fireman that was trapped in a hotel fire. This fireman was supposed to have been on the eleventh floor at the time. The men at the fire could not rescue him in any way at all. As a last resort, the life net was used. The fireman is still supposed to be alive, even after jumping eleven stories.

What is the highest jump made into a life net?

D. K.

Answer: The incident concerning the use of the net to rescue a fireman supposedly trapped on the eleventh floor of a building, to the best of our knowledge, has no basis in fact. Many years ago there was a fire in a mercantile and office building in Chicago in which a number of employees were trapped on the tenth floor and were forced to jump. This incident is believed to have been the first one in which a life net was used by firemen to attempt to save persons jumping from such a height.

Unfortunately, our records do not establish the date or other details of the fire, but the story was carried in the newspapers and also later in magazines. The jump was authenticated by actual photographs showing a person in the air. Not all were saved by the net, but it is reported that at least one person was saved by the net.

It is also our recollection that one or two of the net holders were injured in the process of attempting to save the jumpers. None of the injuries was serious, however. This is believed to have been the highest jump recorded in the actual rescue of persons from fire. No doubt you are aware of the attempt to use nets at the Triangle Shirt Waist fire in New York City, in March, 1911, at which 148 employees were killed, many of them as the result of jumps. Several nets were used at this fire, but all of them were destroyed at the jumping and it is not recorded that a single person was saved by the nets. The building was ten stories in height, and the three top floors were involved.

As for the longest jump recorded in which a fireman did the jumping, we have an item taken from "Popular Mechanics" of quite some time back showing the testing of the life net in which a fireman made an actual jump from the top of a 10-story building. The picture shows the fireman making the jump into the net and the article states that the fireman suffered no bad effects from his leap; the picture shows him falling feet downward, and if he landed in the net in this position, it is difficult to see how he could have done so without serious injury to himself or the net.

Quite recently, in Newark, N. J., firemen caught a would-be suicide in a life net after he had jumped from the eighth floor of an apartment house. Though injured, his life was saved.

Effects of Humidity on Fires

To the Editor:

In dispatching trucks to or answering residential alarms, I have observed that one tank of water (500-gallon booster tank) is sufficient to knock down fire in the average five-room house, where one room is on fire, without having to use any water from the second truck. At other times two trucks with 500-gallon tanks each do not seem to have any effect on the fire during the same season of the year.

Does the relative humidity, irrespective of the type of materials on fire, plus the temperature and dew point, have any bearing on the rate of burning?

J. C. M.

Answer: No two fires are the same, which is probably the simplest way of explaining the need for a single tank at one fire and more than one tank at another, even though the fire seems to be of the same size.

The nature of combustible materials involved in the house, the period the fire has been burning, the types of walls, size of room, constructional features and fire fighting methods all are factors in determining the amount of water required for control of a fire in any particular building.

While the relative humidity has some bearing on a fire, it is not a major factor.

In the case of brush and forest fires, humidity is a major factor, particularly in its effect upon fires starting. Naturally there is less chance of a fire starting in grass or brush when the humidity is high. When the humidity is low and the grass or brush has dried out, then you have a tinderbox situation.

Hygrometers for determining humidity can be purchased in almost any instrument house, but we are of the opinion that they would be of little value in determining how much water would be needed for a particular fire.

The U. S. Department of Agriculture, Forest Products Laboratory, Madison 5, Wis., published in 1953, a report on "Experimental Dwelling-Room Fires." Therein they point out that the nature of the fuel had an important effect on the rate at which the dwelling-room fire becomes critical. In two similar tests, a fire became critical in 4.30 minutes in one

case whereas it took 10.30 minutes in another case to reach the same stage, although contents of the two units were similar. The report further points out that small differences in the proximity of pieces of fuel or the chance direction of flames towards or away from combustible material will play an important part in the time required for the fire to become critical.

Properties and Hazards of Fluorine

To the Editor:

What are the properties and hazards of fluorine? Is it true that glass and asbestos will burn in the presence of this gas?

A. T. P.

Answer: According to a bulletin issued by the Pennsylvania Salt Manufacturing Co., a producer of this chemical, fluorine will cause deep penetrating burns on contact with the body and the effect may be delayed and progressive as in the case of burns by hydrogen fluoride. The hazard of exposure to fluorine in the atmosphere is at least as great as for chlorine. Protective measures against fluorine are not fully developed, and entry into zones contaminated with fluorine should be avoided. Gauntlet type rubber gloves, rubber aprons, and face shields can give only temporary protection against fluorine and if brought in local contact with a fluorine leak may inflame.

Fluorine is a nearly colorless gas which can be condensed below the critical temperature of −129 degrees C to a liquid which boils at −187 degrees C under one atmospheric pressure. In physical properties, fluorine resembles the fixed atmosphere gases, oxygen and nitrogen. It has an intense odor which some observers describe as similar to ozone, somewhat chlorine-like and highly irritating. Fluorine reacts vigorously with most oxidizable substances at room temperature, frequently with immediate ignition, and reacts vigorously with most metals at elevated temperatures. In addition, it reacts strongly with silicon-containing compounds; thus, it can support the continued combustion of glass, asbestos, etc. Fluorine readily displaces chlorine and the other halogens from the solid metal halides, and reacts immediately with water to form hydrogen fluoride, oxygen, and some oxygen fluoride.

Medical Supply Plant Hit By Severe Fire

Five Los Angeles County fire companies and a rescue company fought an early morning blaze on October 13 in the Roland J. Gaupel Co., medical supply plant, on the edge of Los Angeles city.

Plant officials estimated that damage would run between $35,000 and $50,000. Battalion Chief Sam Tanksley called in arson investigators when he was unable to find an immediate cause for the fire.

Paul Ditzel

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FOCUS ON FIRE —*1001 New Questions and Answers in Practical Knowledge Required by a Modern Fireman, and Drawings, published by Hotspur Publishing Co., Ltd., Gloucester Street, Manchester 1, England, for the Manchester Fire Brigade Sports and Social Club; 168 pages and paper cover; Price 5 shillings.*

This Volume (No. 2) follows the same format of Volume I, issued in 1954, and which had a distribution of 20,000 copies. The book contains questions and answers on the following subjects: Aircraft; Building Construction; Breathing Apparatus; Chemistry; Communications; Electricity; Foam; Gas; Hydraulics; Oil; Pumps; Rural Fires; Special Fires; Ships and Ventilation, arranged in fifteen chapters. There are also forty-five excellent black and white illustrations.

In a foreword, K. N. Hoare, Chief Officer, Manchester Fire Brigade, emphasizes that the book is not intended as a comprehensive treatise on the subject of fire engineering. It does not attempt to replace the excellent Manual on Firemanship which is Britain's basic work for firemen to study. It provides, in convenient form, a series of questions and answers to assist the student in his firemanship studies.

The drawings are designed to provide a ready means of acquiring the technique of illustrating major details of building, fire and other equipment, for examination purposes.

FIRE PROTECTION YEAR BOOK 1956, *16th Edition, published by Fire Protection Review, Bouverie House, Fleet Street, London E. C. 4, England. Price: 12s. 6d. post paid or £1 per year which also includes 12 monthly issues of "Fire Protection Review."*

To those concerned with the prevention and extinguishment of fire, the 16th Edition of "Fire Protection Year Book" is an indispensable reference book. As in previous editions, the subject matter is divided into eight comprehensive sections, each dealing with a particular phase of fire fighting or fire protection.

Section I constitutes a directory of all the public fire brigades and salvage corps in the British Isles; Section II is a directory of industrial and private fire brigades, while Section III relates to the fire services of the Commonwealth and Empire. In the enlarged Section IV are given details of civil defense authorities and their officers; Section V deals with government departments and public authorities concerned with fire prevention; Section VI contains particulars of associations, institutions and societies interested in or actually connected with fire fighting and fire prevention; Section VII and VIII respectively deal with the legal aspects of fire safety and with fire engineering technicalities and essential statistics.

The 1956 Year Book includes a comprehensive list of suppliers of fire safety equipment; classified lists of such equipment, trade names, etc.

SAFETY IN INDUSTRY, *by D. I. MacFarlane. Published by Iliffe & Sons Ltd., London; in the United States by Philosophical Library Inc., 15 East 40th Street, New York, N. Y.; 72 pages and board cover; price $6.*

Originally published for "Machine Shop Magazine," a British Journal, the contents consist of nine chapters dealing with personnel protection. The text contains no reference to hazards of fire and/or explosion and is designed more for the industrialist than the fire fighter.

CAN A LARGE CITY BE DESTROYED BY FIRE —AND FACTS ABOUT CONFLAGRATIONS, *by Assistant Chief (Ret.) Joseph O'Hanlon, New York Fire Department; 54 pages and paper cover. Copies may be obtained from Chief O'Hanlon, 1938 East 15th Street, Brooklyn 29, N. Y. Price $1.50.*

Not too many books are published on fires and fire fighting, so when a new one comes along, we always look at it with more than passing interest. Just off the press is a stimulating and provocative opus by Assistant Chief Joseph O'Hanlon (NYFD, Retired) entitled "Can a Large City Be Destroyed by Fire—and Facts about Conflagrations."

The theme of this book is succinctly stated in a prefatory note:

"This book is a new approach in analyzing conflagrations. In nature, weight indicates power; therefore the air is stressed as the predominating force at fires because the weight of the air needed

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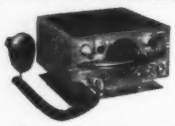

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to burn the fuel has a ratio of about 20 to 1. Heretofore the fuel was considered the all important factor."

Chief O'Hanlon defines a conflagration as "a fire that is burning fiercely, is out of control or has spread to many other buildings, objects or things." On the major question posed in the title "Can A Large City Be Destroyed By Fire?" the author opines:

"There is much evidence available to show that it is almost impossible to destroy an entire, large, modern city by fire, even though the city has been hit by thousands of fire or high explosive bombs or an atom or hydrogen bomb. . . . The ruins of Hamburg, Berlin, London, Tokyo, and the history of these and other disastrous fires contain evidence showing this to be true. However, the ruins in these cities do not determine how much of New York, Chicago, Detroit, Boston or any large city would burn if subjected to bombing or a sweeping fire."

If memory serves, the cities of Hiroshima and Nagasaki were rather thoroughly destroyed by one atom bomb apiece—and that was before the development of more potent nuclear weapons, such as the hydrogen bomb. True, these were not modern cities in the American sense, but the tests made recently out on the Nevada flats and the prognoses by the Atomic Energy Commission on what could happen to New York with the latest types of H-bomb constrain this reviewer to feel that Chief O'Hanlon is a bit over-optimistic in this regard.

But getting back to what might be called the normal type of conflagration, author O'Hanlon makes this very interesting point on the effect of weather and the atmosphere—

"In reporting about fires that have been out of control and burning fiercely, the change of wind has been given credit for getting the fires under control. It was not realized that the heat generated by the fire caused the wind to change its direction, although it has been noted on many occasions at conflagrations that the direction of the wind in the area involved by the fire had changed. In actual fact the change of wind direction was in no way related to the regular weather pattern. It was the result of heat generated by the fire. The area affected was limited to the vicinity of the fire. I witnessed this situation in several conflagrations, specifically at Coney Island, New York, in August, 1933."

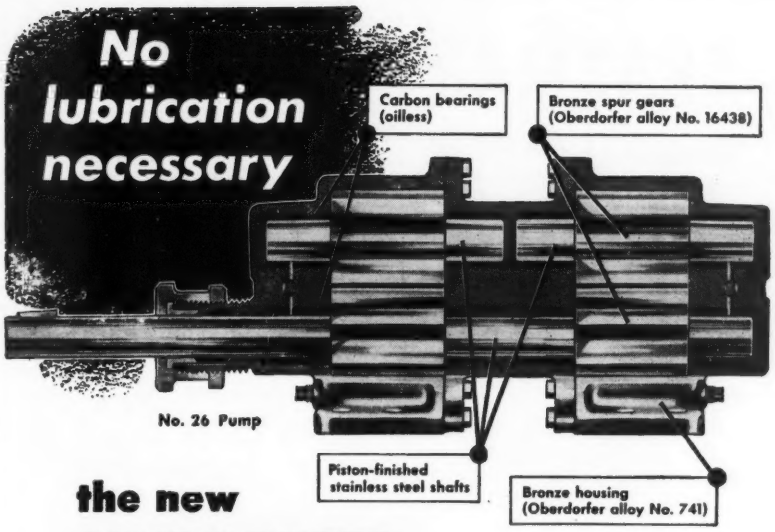
Several chapters are devoted to descriptions of great fires of history, starting with the great London fire of 1666 and closing with the Tokyo air raid fire of 1945. Chief O'Hanlon has amassed an assortment of interesting data and statistics on these holocausts.

Jerry Daly

Blaze Fought at Cotton Gin

Five Kern County fire companies battled a blaze, October 15, at the Sunset Gin near Bakersfield. The gin is owned by the Anderson, Clayton & Co., and damage was estimated at $75,000 to baled cotton.

Paul Ditzel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the round table

discussion of current fire department and fire management problems

Closed or Open Fire Apparatus?

MANY FIRE CHIEFS have written FIRE ENGINEERING concerning the relative values of open-type versus the several different types of cab apparatus. Their inquiries attest the wide diversity of opinions concerning such factors as safety to personnel and apparatus, speed and convenience in operating, and the like.

In an effort to bring our readers as up to date as possible, a large and representative group of chiefs was invited to comment on the subject.

At the outset it should be said that a number of departments, for the most part in fairly large cities, reported they had no closed or semiclosed apparatus. Some others had only a few such units, for the most part rescue and emergency apparatus. Still another group qualified their replies, claiming the climatic conditions did not warrant the enclosed or even semi-enclosed types.

From among other reports, however, we have gleaned the following data:

Question 1. There appeared to be a preponderance of opinions in favor of the type apparatus that encloses driver and men as compared to the model that enclose only driver and one man (usually the officer).

In one city, there was an accident between a semi-cab job (ladder truck) and a closed cab (pumper). A man in the semi-cab broke a leg; a man in the closed job broke an arm, but the crew of the latter was better protected.

It was brought out that in heavy rain or storm, men might sometimes stand up to see in the open cab and therefore are susceptible to accident. Several chiefs stressed the need of dual wipers for windshields, and for some method of keeping windows of cabs free of condensation and cloud.

A number reported "no accidents" to personnel in either type of cab. One reported more accidents with the driver-officer type than the full-closed model.

One striking example came from a Massachusetts city. Here it was maintained that all personnel are safer in the enclosed cab for chauffeurs and members. This city recently had a bad accident the past year. Two men in a cab job were not seriously hurt in a smashup, while two men in an open type unit were tossed some distance and died from head injuries.

In another city a man was thrown from a front seat and killed; the chief of this department stated that the fireman would have been saved with a closed piece of apparatus.

Question 2. There was general agreement on this question, the majority maintaining that it is safer to (1) ride men inside apparatus; (2) to ride men on the rear step rather than on the side, where accommodations are not provided for enclosing them. There is practically universal opposition to riding men on side running boards (it would appear that most modern pumpers are being designed without such running boards, Ed.).

A few chiefs found it convenient

THIS MONTH'S QUESTIONS

What do your records show regarding accidents and resultant injuries to personnel on fire department apparatus equipped with (a) enclosed cab for chauffeurs and members as against (b) enclosed cab for chauffer and officer only?

Is personnel injury frequency greater when members ride the side running board or rear step (than when inside cab or body of apparatus)?

Have you noticed any difference in sick leaves between men who ride open apparatus and those who ride units provided with cabs?

How do closed cab apparatus compare with open apparatus from the standpoint of accident frequency?

Have you noticed any difference in (a) accidents and (b) operational difficulties such as visibility, spotting, etc., between cab-over-engine and other types?

to ride the rear step responding to a fire, and to carry the crew inside when returning from working fires. One or two pointed out that the running boards on closed apparatus were not actually required for response, but for handling hose in stretching, etc.

Question 3. Here, also, there was practically unanimous agreement among fire officers who have been able to make comparisons that the incidence of sickness, and sick leave, is far greater where personnel ride the open-type apparatus than the closed or semi-closed models.

It was pointed out that men riding the rear step of even closed rigs receive eye injuries from flying objects. Many chiefs reported a noticeable reduction in time-off due to sickness after adopting the protective type apparatus.

Question 4. As for the accident frequency between closed cab and open apparatus, one chief expressed the viewpoint of a number when he said "less accidents for miles covered, with the enclosed type."

Here again, climate and weather apparently colored some reports. A few chiefs reported "about the same." The head of a large municipal department said, "When we first changed (to closed types) there was a slight increase in accidents, but as operators got accustomed to the cars, the accident rate dropped."

Another pertinent observation was this: "Although traffic in our city has increased greatly, we do not have as many accidents with semi-, or full-enclosed as we were having with open apparatus."

Question 5. There were a number of interesting observations offered in answer to these questions. It was generally agreed that cab-over-engine, or cab-ahead-of-engine, resulted in fewer accidents to apparatus than cab-behind-engine, but that where such accidents occurred, the possibility of injury to the chauffeur of the former type was greater.

A few chiefs stressed the improvement in accident rate incidence since converting to the cab-ahead, or the engine-behind-driver-type.

As to visibility, aid in spotting, etc., there was some objection found to the closed and semi-closed type apparatus on these scores. One chief said, "The open cab has advantages (in maneuverability) but concessions must be made to safety."

Several respondents emphasized the difficulties encountered by fogging or fouling up of windows of cab types under adverse weather conditions. They commented on the hazards this condition developed in backing or turning rigs while spotting units at

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fires, or returning them to quarters. A few chiefs expressed the belief that the closed-cab type increases difficulty in placing aerial ladder trucks. Some were inclined to believe it slows operations. A large number stressed the importance of driver training in the use of enclosed types.

Miscellaneous Observations: A number of chiefs reported that mild climatic conditions in their cities did not necessitate closed cabs.

Several chiefs of fairly large departments said they favored the open cabs for downtown operation, and the closed cabs for long runs and rural operations.

Strict enforcement of safety regulations was declared a "must" by many chiefs in commenting on various types of apparatus. A number pointed out that experience and training can help men become accustomed to closed types who at first did not like them.

One officer reported that he liked the closed type because all freezable extinguishers could be kept inside and readily available for use in bitter weather.

Readers are invited to contribute to this Round Table which will be continued in the February issue. Address replies to Round Table Editor, FIRE ENGINEERING, 305 East 45th Street, New York 17, N. Y.

Discussion of the Subject

John W. Gallagher, Chief, Huntington, W. Va.: Our records show no accidents or injuries to fire department personnel while riding in enclosed cab for chauffeurs and members, or in enclosed cab for chauffeur and officer.

Fire department personnel are forbidden to ride running boards of fire apparatus as this is an invitation to injury.

We have noticed a difference in sick leaves between men who ride open apparatus and those who ride cab enclosed trucks, especially in extreme cold and rainy weather, and when returning from fires where the men have been exposed.

We have noticed a difference in operational difficulties especially as to visibility, between cab over engine and other types.

V. L. Crusinberry, Chief, Sioux Falls, S. D.: We have had no personnel injuries since 1947. This happened to be the year when we put in service our first apparatus with open cab and doors with glass wings and windshield, with two members riding the rear step. Our records show that injuries have been more frequent when members ride the running board. Today, no members of our department ride the sides.

Our men wear adequate protective clothing, and, in my opinion, the open cab has very little effect on sick leave.

There is no doubt but what a cab with doors and seats is safer than running boards and seats without side protection.

I am convinced that visibility is better with cab over or ahead of engine and that it will cut down on accident frequency. However, in case of accident, I believe the possibility of serious injury is much greater than cab-back-of-engine, due to the fact that the men would be close to the point of impact, especially if the fire engine hits another car or truck, instead of the other driver hitting the fire truck.

John G. Carlisle, Chief, Corpus Christi, Tex.: We have made a survey in heavy rain of the safety factors of an enclosed and an open cab. With an open cab, it is sometimes necessary for men to stand up and drive in order to see, although some departments use dual windshield wipers to overcome this. We also like the advantage of a cab with the FM radio antenna mounted at the highest level of the apparatus. The cab acts as a ground plane for the radio waves, or so I have been told by electronic engineers.

I do not condone men riding on the sides or rear of fire apparatus, although it sometimes is necessary. We had a particular case a few months ago when one of our fire fighters who was riding the rear step of a pumper, hit his chin on the hand rail and was knocked uncon-

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scious when the driver made a sharp right and left turn in order to avoid a chug hole. Had it not been for a fellow fire fighter who grabbed the unconscious man and held on to him while pressing the buzzer in the handrail which brought the driver to an immediate stop, this man would have probably lost his life. Some thought has been given to the installation of buzzers on both handrails at the rear of the apparatus. Since our new radios will be equipped with amplifiers, some research has been made into the advisability of installing a microphone on the rear of the apparatus.

Some of our men have recently received eye injuries from flying objects while riding on the rear of apparatus.

I prefer a closed cab. I am sure closed cabs would reduce accident frequency substantially, provided of course, there is adequate ventilation and the men are not subjected to intense heat from the engine. This is hard to sell to old, seasoned fire fighters who think little of the advantages of protection. In many departments even today respiratory equipment has not been accepted.

We have not received any injuries. There are operational difficulties in engines having cabs such as visibility and spotting, but these can be overcome by better training. We have the same driver for each piece of apparatus at all times, and there is a regular driver appointed for the relief crew. Less accidents result from this method. It is my opinion that more time should be devoted to safety instruction and to the development of good riding and driving habits.

John H. Krusenklaus, Chief, Louisville, Ky.: Weather conditions in Louisville do not necessitate the use of closed cabs for our apparatus.

R. L. Rudd, Chief, Fort Smith, Ark.: Our records do not show any more sickness from men using open cab trucks than those using closed cabs.

Our accident rate is about equal between the two, although our major accident rate is greater in open cab trucks, because we are equipped with more of them and they are older trucks.

The great majority of men and officers are in favor of open cab trucks, because of greater visibility in spotting trucks and sizing up fires while some distance away.

Arnold Papenhagen, Chief, Toledo, Ohio: We have one pumper and a rescue and salvage squad truck that carry all men under cover.

We also have three hook and ladders and eleven pumpers that carry chauffeur and officer only under cover.

After a compilation of our accident records, we cannot find any notable difference in accidents.

Personnel injury is greater when members ride the side and rear of equipment, but the frequency is not greater.

After a careful check, we find no appreciable difference in injuries between those riding in cab or out.

As our equipment is about equally divided between open and closed cabs, we have had a fair chance to test the

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about respiratory accidents

Like all problems facing hazardous occupations such as fire-fighting—fire-prevention or saving lives, there are the surface appearance and the "inside" story.

One demonstration of the

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●Quick-Starting ●Portable
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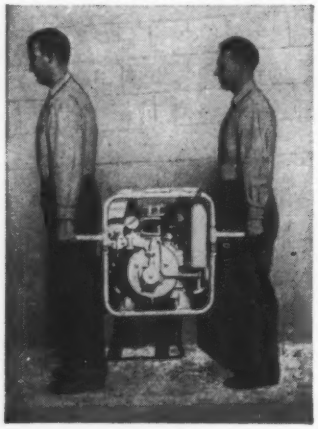

Above—Frame-mounted FZZ can be easily carried by two men. It is also available mounted on rubber cushioned steel channels or on two truck-type wheels.

Fire Companies frequently write us telling of the many practical ways they use their portable Hale type FZZ, such as the following:

- **For fighting field or forest fires from moving trucks.**
- **For "wetting down" and standby use, thus releasing major equipment.**
- **For pumping out flooded cellars and elevator shafts after fire, flood or other emergency.**
- **For relaying water to pump or booster tank from sources inaccessible to major Fire Pumpers.**
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The FZZ will supply from draft, 2 capable fire streams thru 1½" lines. Its performance substantially exceeds the NBFU and NFPA capacity and pressure requirements for portable pumping units.

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No Obligation.

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CONSHOHOCKEN - - - - PENNA.
Fire Pumps in All Standard Capacities

difference between the two types—so far we find none.

We do find that our cab-over-engine truck is easier to maneuver, although there has been no difference in accident frequency.

Russell C. Bowers, Chief, Bureau of Fire, Reading, Pa.: The City of Reading has no closed jobs.

We do not permit firemen to ride on the side of apparatus.

Howard L. Dey, Superintendent of Fire, New Orleans, La.: We had a severe accident between Truck 4, a semi-cab and Engine 13, a closed cab. One man in the semi-cab broke a leg and one man on closed cab broke an arm. Several other men were badly shaken.

We have had no severe accidents on running boards or rear steps.

We haven't noticed any difference in sick leaves between men who ride open apparatus and those who ride in cabs.

As to the frequency of accident between the two types, we are unable to say as the larger percentage of our rigs are semi-cabs.

We only have two pieces of apparatus with cab over engine.

Maurice K. Clark, Chief, Wilmington, Dela.: We have only one closed cab apparatus, this being our rescue squad, and I have noticed no less or greater difference in illness or accidents to members riding this apparatus.

R. L. Lampley, Chief, Montgomery, Ala.: Fortunately we are unable to answer the questions as we have had no injuries on our apparatus while going to or from fires in over twelve years.

I would say that we are fortunate in being able to make this report. However, we attribute this mainly to our strict enforcement of safety regulations of driving fire apparatus to and from fires.

Stephen H. Edmonson, Chief, Pasadena, Calif.: The apparatus operated by the Pasadena Fire Department are of two types: Open apparatus; and cab for driver and officer, with a half-cab for members. Our records do not show any correlation between the two regarding accidents or injuries.

We have only two injuries in twenty years from which to judge whether personnel injury is more frequent when members ride the side running board or rear step than when inside car or body of apparatus. Most members ride the tail board, the reason being the cab is not readily accessible to the members as they must climb over a catwalk as they enter and leave the cab. No member riding inside a cab has ever been injured.

We have not noticed any difference in sick leaves between men who ride both types of apparatus. The weather in this part of the country is not severe; also, our runs are of short duration.

During the last five years, fire apparatus have been involved in five traffic accidents. Cab-covered apparatus were involved in two. The ladder trucks accounted for the other three. Although the truck is open apparatus, the size of the

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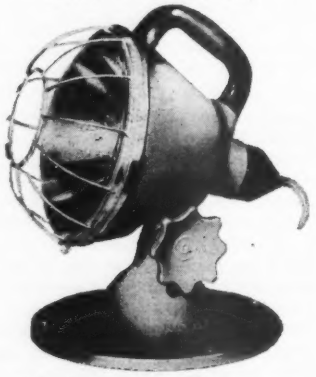

write for complete data . . . . . .

NATALE
MACHINE & TOOL CO.
339 Highway #17 **Carlstadt, N. J.**

ladder trucks must be taken into consideration. There were no injuries involved in any of these accidents.

Captains and drivers are in accord on the premise that the open cab has greater visibility for spotting and sizing up the fire on the way in to the fire. However, the closed cab has a greater amount of safety features, such as protection during rain.

Donald S. Charles, Chief, Charlotte, N. C.: This city, as far as I have been able to determine, pioneered in the use of a fully enclosed pumper unit. Since this initial purchase in 1935, we have specified a canopy type cab with front and rear seats on all pumper and ladder units acquired by the department. In fact, fifteen of the eighteen pumper and ladder companies now in use in the department are so equipped, and bids will be received in just a few weeks for three 1,000 gpm pumpers of this same type to replace one of the above units and to equip a new two-piece station now under construction. It is anticipated that the two remaining open type units will have been replaced by 1957.

From our experience with both the open and closed type of apparatus, we are convinced that the personnel are better protected from injuries resulting from accidents as well as from exposure to the elements in responding to or returning to quarters from a fire. We know, too, that the number of sick leaves of men on the open type equipment is much higher than among the men assigned to closed units.

We have noticed no appreciable difference in operational efficiency between cab-over engine or engine-forward-of-cab units or between the open or closed.

Insofar as accidents are concerned, we feel that many factors such as speed, visibility, brakes, warning lights and devices, driver attitude and training and traffic control have an influence on accident frequency.

To meet this situation we have imposed speed limitations; provided the apparatus with electric windshield wipers, cab heaters and hot air defrosters; multiple red blinker and flasher lights, sirens and air brakes. We constantly stress the correct driving attitudes and have installed traffic control signals with audible warning devices at intersections near each station.

We can say definitely that this program has reduced the accident frequency in the department, as well as the seriousness of injuries resulting from such experiences.

Thomas Collins, Chief, New Haven, Conn.: All our apparatus are of the open type, except two 85-foot trucks. We have had very few accidents on apparatus, except a fatal accident on December 15, 1953.

We have not noticed any difference in personnel injury frequency nor any difference in sick leaves between men who ride in open cabs or those who ride in the closed cabs.

We believe that the closed cab slows up operations.

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FIRE HELMETS

The "CLIFTON"
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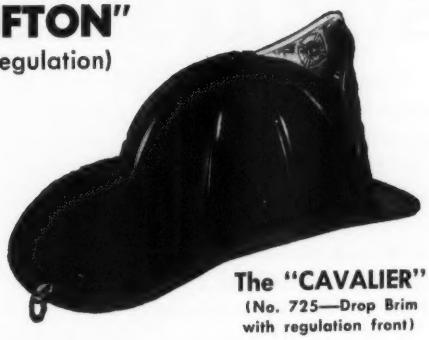

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Regulation 8-comb style, or drop brim style, with standard front; made of FLINT-FLEX, the rugged plastic that is light, tough, flexible and non-conducting; has the new FORMABLE HEAD BAND that can be moulded to your own particular head shape; complete protection at moderate cost. Other CAIRNS HELMETS in leather and aluminum.

Write for Catalog 351

CAIRNS & BRO., Inc.—Allwood, Clifton, N. J.

World Wide Fire News

By Roi B. Woolley

Sense Red Plot in Fatal Frankfort Blast

A mysterious dawn explosion Dec. 7 demolished a five-story apartment house in midtown Frankfort, Germany, killing 27 of its occupants, seven of them children.

German police and bomb experts joined state and city officials in an attempt to determine the cause of the blast, which occurred at 5:40 a.m., shattering the structure.

Suspicion was aroused by the fact that all but two couples living in the building were refugees from Communist-controlled East Prussia and the Sudetenland. Among the dead was the Slovak-born architect-owner of the building, who was identified as a heavy financial contributor to the right wing Slovak Refugee Committee whose leader was killed by a mailed bomb last July.

Other possibilities investigated by police were that a dud aerial bomb from World War II exploded under the building into which 12 families moved two weeks ago; that gas seeped from a city main into the structure, or that a tenant had unlawfully tried to tap the gas main.

All that was left of the building was a 20-foot high mound of broken concrete and splintered wood. German police and firemen and United States military police and engineers dug into the wreckage with picks and shovels under floodlights until arrival of two 2-ton U. S. Army cranes. Most of the seven persons rescued alive had miraculous escapes from death.

Fire Hose Dampens Comet Welcome

When Britain's new Comet III jet airliner screamed into Sydney, Australia, on Dec. 4th, smashing the London to Sydney record, the arrival started a stampede by a crowd of 26,000 persons which grew so 'hot' that firemen had to be called to help gain order.

Crowds streamed onto the runway, forcing the pilot to zoom into the air again. When the plane landed on its second try, children risked death by running in front of it, and the throng ran after the new plane, oblivious of a Constellation landing behind them.

The airport manager ordered hoses played on the excited crowd, both to drive it into safe areas, and because some persons were smoking near the aircraft.

It is reported that an expected visit of the plane to New York City on its flight to Canada may be cancelled because of the public's reaction to the noise.

Connecticut Asks C. D. Radio Net

Establishment of a $40,000 radio network, which would cover the State of Connecticut during emergencies, was reported requested of the State legislature by state C. D. Director Leo J. Mulcahy.

During the August floods, as was pointed out in *Fire Engineering* (Nov., 1955), regular telephone communications were out in some areas. Limited radio communications systems available for disaster work in places were overloaded. The need for a C. D. short-wave radio network, said Mr. Mulcahy, is essential.

After the August and October flood emergencies, a survey of the civil defense communications system was made by the Southern New England Telephone Co., and the requested radio network followed as a result.

The proposed radio set-up would be used in the preliminary stages of an emergency to send out alerts.

From the World News Ticker

St. Catherines, Ont., police collared a 13-year-old boy recently and questioned him about a mail box fire started when somebody dropped lighted matches through the box slot. Firemen extinguished fire as the boy looked on. . . . Twenty French fishermen jumped into the icy waters of the English Channel early Nov. 25 when their trawler was swept by fire. They were saved by rescue vessels. . . . When a DC-7 landed at International Airport Nov. 25, the pilot notified the control tower his No. 3 en-

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gine was afire. While Port Authority crash crews put out fire with fog-foam, other rescue workers set portable emergency ladders against the plane and removed all 52 passengers. . . . Dec. 6 marked the 37th anniversary of the munitions explosion in Halifax Harbor, unequalled until the advent of the atom bomb. The blast, following collision of two ships in the harbor, brought death to more than 1,700 persons and crippled thousands for life. More than 1,500 homes were demolished by the explosion, felt hundreds of miles from Halifax. It pays to remember! . . . It is said that canned foods exposed to the atomic tests in Nevada last spring have not been harmed. Tin and glass-packed foods were generally undamaged even less than three-fourths of a mile from the blast. Scientists have also found that that canned goods exposed to nuclear explosion are still just as rich in nutrients six months later, as before the blast. . . . We quote: "Two girls died Friday when fire destroyed their home, near Merritt, B. C., 130 miles northeast of Vancouver. Inadequate fire fighting equipment in the tiny community of Lower Nicola, six miles west of here (Merritt) prevented neighbors stopping the wind-driven flames." . . . and also this item: "Four children, all under 4 years of age, were burned to death today (Dec. 4, 1955) when fire destroyed their home in Bathurst, N. B. Their Mother was rushed to a hospital with bad burns she received in saving two other children. . . . Racked by explosions, a 7,000-ton Italian coal ship with 35 crewmen fought fire amid snow squalls and 14-foot high waves in the North Atlantic. Master of the collier, Dea Mazzeria, sent an S.O.S. There had been explosions in two holds. Later it was reported the fire was under control. Two members of the crew suffered critical burns and were treated by a doctor and a nurse from the American ship American Miller, and rushed in that ship to Halifax. . . . The Nassau County police bomb squad recovered one of six 50-gallon drums of explosive liquid which were swept into Long Island Sound by floods in Connecticut. Dangerous barrel floated ashore near Bayville, L. I., many miles from its point of storage. . . . A forest fire destroyed timber worth about $7,400,000 Nov. 27, last, as it raced out of control through 6,000 acres of Balmoral State Forest in North Canterbury, New Zealand.

Los Angeles Theater Razed By Flames

Ten Los Angeles firemen narrowly escaped death, early October 4, when a roof caved in while they battled a stubborn two-alarm fire in the Dale Theater, 3526 Eagle Rock Boulevard.

Theater owner William C. Jenkins said the damage might go as high as $200,000.

The blaze is believed to have started in an electric motor powering the theater's screen curtain. The building closed at 11:30 p.m., the night before, and occupants of apartments above the theater smelled smoke at 1:45 a.m.

Paul Ditzel

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GLOBE gives you 3 suits in 1—

. . . each designed to do a specific job. *One,* the outside garment, is tough duck, made to take the rough usage fire fighting demands. It protects garment number *two,* the water-proof interlining made with 100% DuPont Neoprene. Garment *three* is the lining, light for warm climates, heavy for cold sections. The GLOBE SUIT combines these three garments into ONE PERFECTLY BALANCED SUIT!

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Lok-Tite brackets help solve hose storage problems by providing ample ventilation and easy access for fittings inspection in limited space. Build your storage racks with new or used materials.

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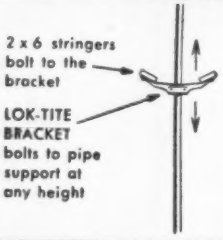

Lok-Tite Brackets won't slip under any load the pipe and stringers are able to support.

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Our Readers Write Us

Pungent Fumes in Dress Shop

To the Editor:

In the November issue of FIRE ENGINEERING, under the informative column entitled "Questions and Answers," I noted with interest the question relative to 'Pungent Fumes in Dress Shops' as submitted by F. K.

F. K. explains the conditions as prevailing in two dress shops in his city in detail, and then concludes by asking this question, "Have you heard of any similar situations?"

Your answer to his inquiry states, "The situation you describe is quite puzzling, for so far as we know there are no chemicals used in dyeing garments which throw off pungent gases." You go on to describe a like situation wherein the source of trouble was traced to improperly made sewer pipe joints, which permitted gases to seep into an establishment.

Your answer also indicates that the fire services know relatively little, if anything, concerning this "new" situation with which they are confronted. F. K. stated in his outline that the managers of the stores in his city believed the irritant, pungent fumes come from the new materials and dyes that are being used in ladies' apparel.

The facts are: The managers are 100 per cent right in their assumptions. And this same situation, or condition, is plaguing other such business establishments throughout the country.

Yard Goods Stores Affected

Inquiry will show that business such as "piece goods shops" handling ladies' apparel materials in bolt form, or other sewing materials sold by the yard are much more severely affected by the irritant fumes than are those stocking ready-made garments only.

We had (and have) the same situation prevailing in a local store, a piece goods shop, stocking only materials in bolt form. It was first reported to us during the mid-summer months of 1954 in the usual manner—"There's gas coming into our store from somewhere. Will you please come down and check the building?"

We answered the call immediately and upon entering the store detected only the usual odors inherent with such types of occupancies. However, the proprietress and employees were 'red-eyed' in varying degrees, complaining that the 'gas' was burning their eyes and nostrils. One employee was affected so severely she had to leave the store, and can work only when the irritating situation abates, and during winter months. Customers were being affected, too, some to the extent that they were forced to leave the store before completing purchases.

After being in the store but a short time we were affected, too. Naturally, we

surmised that some type of gas was seeping into the shop and we thoroughly checked the building for some source. We found none, even though we worked for hours. Everything was checked out: gas lines, sewers, electric lines, appliances, partition walls (where possible), areas around the building and all adjoining and adjacent buildings, and their contents, cleaning fluids and supplies, etc.

This situation prevailed throughout the summer of 1954 in varying degrees of irritant intensity. During the winter of 1954-1955, employees and customers experienced no discomforts in any marked degree. However, some customers stated their 'eyes stung just a little bit'.

Humid Weather Aggravates Situation

With the arrival of our hot, humid summer days of June and July this year, the irritating, pungent (and vexing) situation was again brought to our attention. Again, we re-checked the store, building and surroundings as thoroughly as the previous year and found nothing that would contribute to the prevailing condition. Needless to say, question marks were flying thick and heavy.

Then, on or about July 15th, 1955, the proprietress called me to come down to the store, stating that she had found out that a similar condition was existing in a piece goods shop in a neighboring city, and that she had an idea as to where the irritant fumes might be coming from. I complied with her request and stopped in the store. The proprietress stated that a customer from our neighboring city couldn't stay in her local store long enough to complete a purchase due to the irritant affecting her eyes, so she decided to make her purchase at our Montgomery store. But, just as soon as the customer opened the door to walk into our store, she backed away into the sidewalk exclaiming, "My God, they've got the same thing up here. What's wrong!"

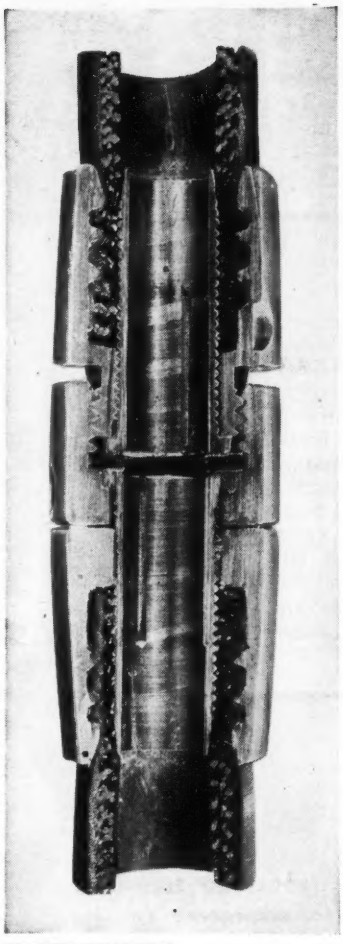
The proprietress then questioned the prospective customer about the "same thing" and found that an identical irritating situation prevailed in the store in our neighboring city, much to the dismay and discomfort of all concerned.

We discussed the situation at length and arrived at the following conclusions: The irritating, pungent discomfort was being caused by one or more of several things, namely:

1. Synthetic fibers, used in the manufacture of yard-goods, such as nylon, dacron, orlon, rayon, acetates, etc.
2. The process used to make cotton materials 'wrinkle resistant'.
3. The material dyes, or some ingredient used in the manufacture of the dyes.
4. 'Finishing' processes used in the manufacturing of yard goods.

We also agreed that several extenuating circumstances contributed to the degree of irritating intensity, namely:

1. Time of year (most discernible during summer months).
2. Heat and humidity (on very hot and very humid days the irritating discomfort was pronounced).
3. Air movement (situation worsened when circulating fans were turned



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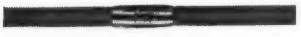

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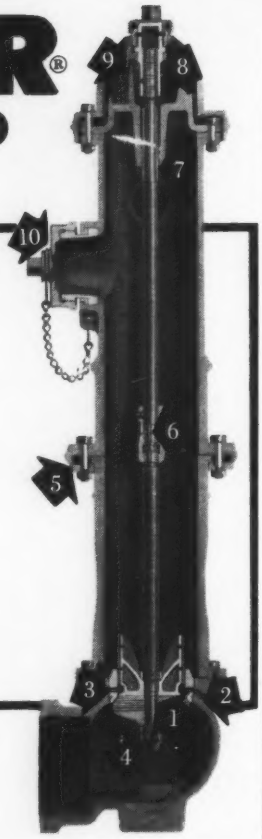

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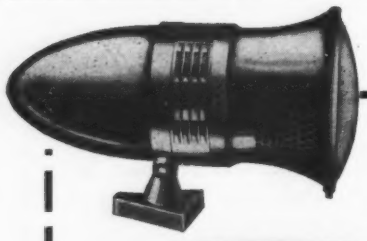

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on). This store had no air conditioning equipment, only fans.

4. The individual's susceptibility to the exposure.

I promised the proprietress that I would endeavor to find the answer to this vexing problem by presenting the situation for discussion at our annual West Virginia State Fire School, conducted at West Virginia University in Morgantown the following week.

On July 27, 1955, the problem, or situation, was explained in detail to the Industrial Fire Protection Class at the Fire School, comprised for the most part of fire protection and chemical engineers from the many huge chemical manufacturing firms located in our State.

I received a prompt answer to my question of; "What is causing the irritant, pungent fumes that are burning the eyes, throat and nostrils of persons in piece goods and apparel shops?"

Ingredients of Dyes the Cause

The answer is: This discomfort is being caused by two ingredients being used in the manufacture of improved clothing dyes. They are: pthalic anhydride and maleic anhydride.

Pthalic anhydride is almost odorless. Maleic anhydride does have a peculiar, pungent odor. Both are eye irritants. The engineers answering my question explained that the degree of irritation depended upon the same extenuating circumstances as outlined in this letter. They also stated that the two ingredient chemical compounds are used either singly or in combination in the making of modern color-fast dyes.

It is obvious that the Fire Service can do absolutely nothing to eliminate this so-called 'gas' situation when it is called to their attention for investigation. However, fire department officers, or inspection personnel, can explain the cause of the irritating discomfort to store managers and owners. It would be possible to alleviate the degree of irritant intensity by shutting down all forced-draft ventilation within the affected establishment, but it would be impossible to eliminate the source.

A word of caution: Due to the peculiar, pungent odor of maleic anhydride, it is possible that its fumes could 'hide' an actual seepage of gases and vapors into a building or mercantile establishment. Therefore, fire service officers upon receipt of the usual 'gas' odor complaints should make a thorough, detailed inspection of the premises before jumping to the conclusion that "It's just that smell that comes off the stuff they got in the place!" They could be 'dead wrong'—with disastrous results.

It is obvious, too, that the elimination of this new headache for the fire service and business people rests squarely with the chemical manufacturers and dye makers. It is apparent, too, that we will have this irritating condition with us for quite some time before effective measures can be taken to eliminate the source.

Yours very truly,

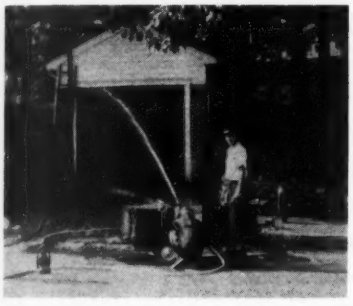
Roger W. Nowviskie, Chief
Montgomery, W. Va.

Boston Juniors Take Chapter from Professionals

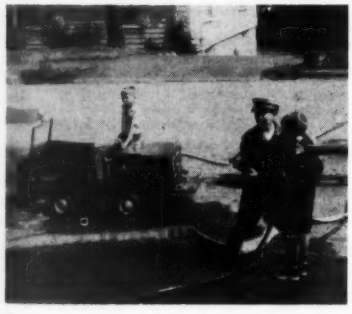
The Boston Junior Fire Department "Headquarters," according to the letterhead, at 32 Peak Hill Road, Roslindale, Mass., takes this business of fighting fires seriously. It also takes its procedures from the metropolitan Boston Fire Department.

According to "Chief" Teddy Maiorana, of the Junior organization, the "Department" is no local affair. "We have divided Boston's lower section into three districts," Chief Teddy reports. These are covered by three district chiefs.

Furthermore, the department has all new equipment, Engine 6 being the newest. The dispatch of apparatus to fires is directed from Headquarters and the Department has a radio by which are received boxes and stills. There is a box system and a certain amount of apparatus is sent to each box.



Engine 1 pump operating a deck gun

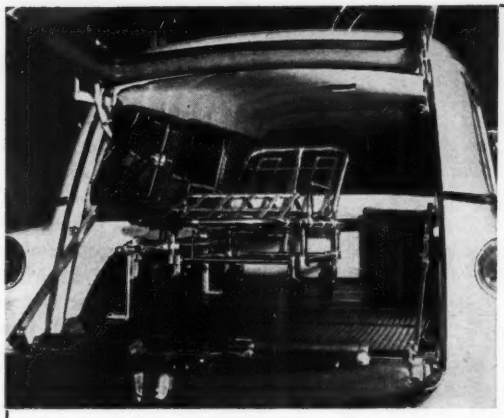


Three men covering exposures with two lines

According to the chief, the fire houses are connected by a telephone system only, but the department also has a photographer (witness the accompanying pictures), an arson inspector and a maintenance shop, if you please.

Besides the chief of department, Teddy Maiorana, there are an assistant chief and a deputy chief. Says the Chief: "Our men are made up of boys from nine to fourteen."

The inventory of equipment includes honest-to-goodness 2½-inch and 1½-inch hose, fittings and nozzles, gas masks and first aid kit, one deck gun, lights, lifeline, boots, coats and miscellaneous other equipment.



WASHINGTON
STATION WAGON CONVERSION COT AND STRETCHER KITS

←

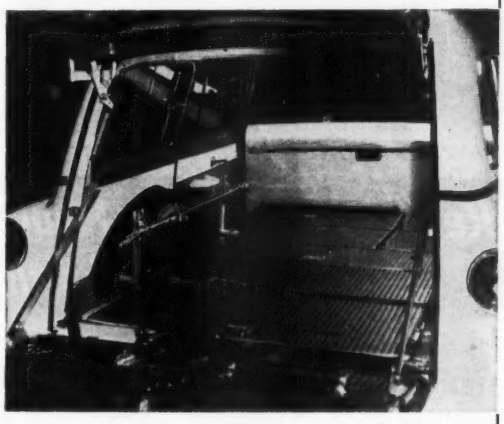
Washington full senior size Kontour-Kot with 5" cushion tires, in a Ford country sedan.

WASHINGTON MAKES A COMPLETE LINE of station wagon conversion cot and stretcher kits—with models available to fit any make or model wagon. Installation is simple, and removal is quickly accomplished in a few minutes—leaving the wagon floor clear. Washington cots and stretchers are the first choice for any emergency vehicle, as well as the favorite for emergency rooms, industrial first aid stations and plant hospitals. If you are in doubt as to the proper kit, write us giving the type and model of station wagon, and we will advise you of the most suitable model, with prices.

A PRACTICAL LOW COST ANSWER TO EMERGENCY VEHICLE PROBLEMS!

→

Washington No. 3 cot hook in place. Quickly removed by four screws, leaving only two small flat plates on floor. Tailgate plate available to cover offset at rear door.



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WASHINGTON PRODUCTS CO.

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MORE **EFFECTIVE** FIRE PROTECTION

CITY • RURAL • FOREST

MODEL 6600 PUMPER—Instantly Self-Priming—No waiting when seconds count
HIGH PRESSURE—Use one or two hard-hitting streams or fire-blanketing fog-spray
LIGHT WEIGHT—Easily carried to source of water or fire area
NEOPRENE IMPELLERS—Pump dirty water as well as clean water—assure long life
POWER—Efficient 4-cycle, air-cooled 5 HP engine known and serviced world-wide

BY-PASS VALVE, SPRING LOADED GREASE CUP, NO LOSS OF PRIME, PLUS MANY OTHER FEATURES

UP TO 40 GPM AT 150 PSI

WEIGHS ONLY 110 LBS.

MARINE PRODUCTS COMPANY
515 LYCASTE AVENUE • DETROIT 14, MICHIGAN

MEMCO AERIAL LADDER

This is the latest piece of apparatus for the Herrin (Illinois) Fire Department, which many of you saw at the last I.A.F.C. Convention in Omaha in September. This is the third MEMCO AERIAL now in service in "Little Egypt" (South Central Illinois). Herrin (Estimated population 15,000) like Salem and McLeansboro, has thus marked itself as another progressive and forward looking community.

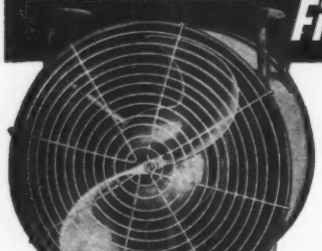
How about YOUR Department?

You can afford a MEMCO AERIAL!

for details write

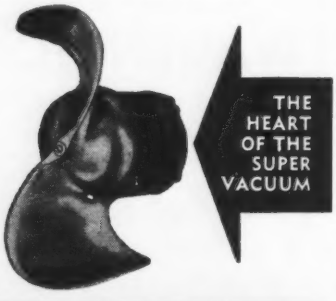
MEMCO AERIAL LADDER CO.
1007 N. W. 36th Street
Oklahoma City 18, Oklahoma

Revolutionary New Principle Increases Fire-Fighting Efficiency!



● The Super Vacuum Smoke ejector is a powerful portable fan unit designed especially for fire departments. This design is a new and revolutionary principle in moving air. Several thousand Super Vacuum Smoke ejectors are in use throughout the United States and Canada. Controlled ventilation is new and very necessary in fire fighting. Years of service and satisfied users are your best guarantee for any merchandise.

● The secret of Super Vacuum is the patented fan blade. Conventional fans chop the air and push it back. Whereas the Super Vacuum fan blade is a perfect spiral air screw which creates a partial vacuum, suction is created over the entire face of the blade and the air or smoke is discharged in a high velocity spiral. There are no dead spots—that is why Super Vacuum outperforms other fans twice its size.



Write for Additional Information or Contact Your Local Fire Equipment Dealer

MANUFACTURED EXCLUSIVELY BY

Super Vacuum **MANUFACTURING CO., Inc.**

319½ East 17th Avenue • **Denver 3, Colorado**

What's Burning?

THE FOLLOWING LIST includes fires of $10,000 and over in the United States and Canada for the month ending December 22nd.

Childersburg, Ala.—Building at Alabama Ordnance Works and costly machinery damaged.
Glendale, Cal.—Products Research Co. damaged.
Hoopa, Cal.—Butane plant on Indian reservation damaged. Leaking line.
Los Angeles, Cal.—Old Dixie Southern Barbecue Restaurant and four dwelling apartments destroyed.
Paso Robles, Cal.—Dwelling of James Dunlap destroyed.
Rosemead, Cal.—Vacant restaurant and bar at 8772 E. Valley Blvd., damaged.
San Francisco, Cal.—Warehouse of F. F. Burns Drayage Co., Pier 92, destroyed.
Danbury, Conn.—Building occupied by Hilltop Restaurant and four dwelling apartments destroyed.
South Norwalk, Conn.—Business building housing furniture showroom, bar and grill, radio and television salesrooms and travel agency, damaged.
Washington, Conn.—Sanford House at Rumsey Hall School destroyed.
Waterbury, Conn.—Funeral home owned by Thomas Colsanto destroyed.
Washington, D. C.—Main warehouse of Barber & Ross Co. destroyed.
Jacksonville, Fla.—Calvary Temple Assembly of God damaged. Overheated heater.
Miami, Fla.—The two-story building on Flagler street, housing the Rafe Beauty Salon, the Red Cross Shoe Store and Cy Bernard's Men's Shop, destroyed. The adjoining Roberts Hotel was heavily damaged by smoke and water.
Port Wentworth, Ga.—Hill Bros. Lumber Co. shed destroyed.
Post Falls, Idaho—Post Falls High School destroyed.
Chicago, Ill.—Ernest Glick Neckwear Co. building destroyed.
Chicago, Ill.—Otis Motor Service's garage destroyed. Defective boiler.
Chicago, Ill.—South Deering Methodist Church destroyed.
Chicago, Ill.—Buildings from 3300 to 3312 West Madison Street, occupied by Burny Bros. bakery shop, Harvey shoe store, Jane's women's apparel shop, Moderne cocktail lounge and apartments, damaged.
Madison, Ill.—Steel joist division of Laclede Steel Co. damaged.
Pleasant Plains, Ill.—Farm home of A. H. Spitzer, Jr., R. D. 2, destroyed.
Stockton, Ill.—Stockton's elementary and high school building destroyed.
Freetown, Ind.—Davidson Feed Service and adjoining concrete elevator, 15 miles west, containing farm machinery, damaged. Friction sparks from grinder.
Terre Haute, Ind.—Downtown Restaurant damaged.
Charter Oak, Iowa—Building housing Butler Motor Co. destroyed.
Des Moines, Iowa—Building housing Pete's Place, Industrial Arts Supply Co., Herman's Salvage Store and Walnut Billiards Parlor, destroyed.
Hampton, Iowa—Building housing Stover Sales Co. destroyed; adjoining building housing Franklin County maintenance garage, damaged.
Fulton, Ky.—Building housing Fulton Paint and Glass Co. and apartment occupied by Ernest Byrd, destroyed. Kerosene stove exploded.
Paducah, Ky.—Dover's Super Market destroyed.
Baltimore, Md.—Maintenance shop of Anchor Motor Freight Co. destroyed.
Assonet, Mass.—Terrybrook Finishing & Printing Co. destroyed.
Attleboro, Mass.—City Public Works Department garage and equipment damaged.
Somerville, Mass.—Royal Furniture Co. damaged.
Brimley, Mich.—William Jarvis tavern destroyed. Overheated furnace.
Harbor Beach, Mich.—Dow Hotel destroyed.
Lansing, Mich.—Warehouse of Michigan Farm Bureau destroyed.
Romeo, Mich.—D. & C. Variety Store on Main street, destroyed.
St. Paul, Minn.—Willard apartment hotel damaged. Cigarette.

St. Paul, Minn.—Arrow Pontiac Co. damaged.
Spring Valley, Minn.—Showplace at Tony Simmons farm, three miles southwest, destroyed. Overheated combination wood and gas kitchen range.
Worthington, Minn.—Odd Fellows building occupied by Gramac Dress Shop, Johnson's Bakery, Mrs. Gowdy's apartment and Odd Fellows Lodge, destroyed.
Lincoln, Neb.—Hangar at Lincoln Air Force Base destroyed. Navy jet fighter plane ran wild on a flight line.
Hightstown, N. J.—Harold C. Mount Co. combination garage and warehouse on Route 130, destroyed.
Carlsbad, N. M.—Two city-owned hangars and 10 privately owned airplanes at Municipal Airport, destroyed.
Maxwell, N. M.—Lacy Feed Mill, a mile north, damaged. Spontaneous ignition.
Bath, N. Y.—Main building of State Fish Hatchery destroyed.
Brighton, N. Y.—McQuaid Jesuit High School damaged.
Buffalo, N. Y.—Rich Building occupied by Grange's Restaurant, Santora's Pizzeria and Franklin Bowling Center damaged. Explosions.
East Rochester, N. Y.—Building housing East Rochester Candy Kitchen, spread to Patterson Hardware Store and Clinton Bargain Store, destroyed. Overheated motor in a cooler.
Glens Falls, N. Y.—Millwork and building material plant destroyed.
Herkimer, N. Y.—F. E. Hale Mfg. Co. damaged. Sparks igniting in the sawdust bin over boiler room.
Homer, N. Y.—Jacks Service Station destroyed.
Hoosick Falls, N. Y.—Automobile dealer's service garage destroyed.
Jamaica, N. Y.—Glove shop, spread to Greenwold Jewelers, National Shoe Store and Lady Rose women's clothing store, damaged.
Kiamesha Lake, N. Y.—Former Gluck's Hillside Hotel, recently purchased by Concord Hotel, in Sullivan County, destroyed.
Monticello, N. Y.—Office and residential building damaged.
Ossining, N. Y.—St. Matthew's Methodist Church damaged.
Penn Yan, N. Y.—Local plant of Empire Wire & Cable Co. destroyed.
Plattsburg, N. Y.—St. John's Academy damaged.
Port Chester, N. Y.—Stable used as a storage warehouse by Lombardi Waste Co. destroyed. Oil range.
Syracuse, N. Y.—St. Vincent de Paul Roman Catholic Church destroyed.
Watertown, N. Y.—Barn on Harold Company farm, Draper Hill, destroyed.
Wolcott, N. Y.—Main Building of Russell Fuel & Supply Co. destroyed.
Jacksonville, N. C.—Jean's Five and Ten Cent Store destroyed.
Maxton, N. C.—Maxton Bonded Warehouse destroyed.
New Bern, N. C.—Neuse Forest Convalescent Home, four miles east on U. S. 70, destroyed.
Roxboro, N. C.—Burnett Redrying Plant damaged. Oil heater explosion.
Washburn, N. D.—Washburn Motor Co.'s garage on U. S. 83, destroyed.
Celina, Ohio—Amstuts Broiler House on Rt. 29, destroyed.
Cincinnati, Ohio—The Bimel Co. warehouse damaged.
Cleveland, Ohio—Kamm's Recreation Bowling Center destroyed.
Gibsonburg, Ohio—First Methodist Church damaged.
Lakewood, Ohio—Harsch Bronze & Aluminum Foundry Co. damaged.
Marietta, Ohio—Marietta Concrete Corp. damaged.
Norwalk, Ohio—John Suhr Insulation Co. destroyed.
Toledo, Ohio—H. Poll Electric Co., wholesale electrical equipment firm, damaged.
Zanesville, Ohio—Building in downtown section occupied by Question Mark Cafe and building occupied by Zanesville Motor Sales, Inc., and Rose Furniture Co., destroyed.
Portland, Ore.—Collins Concrete Steel Pipe Co. destroyed. Faulty heater.
Langhorne, Pa.—Main section of clubhouse at Langhorne Country Club, destroyed.
Lehighton, Pa.—Buildings housing a paint and wallpaper store in middle of South First street, other businesses, a number of offices and several apartments, destroyed.
Philadelphia, Pa.—Building occupied by Allied Paint Mfg. Co., Drewes and Ernest Paint Co. and Kent Auto Body Co. destroyed. Spark.

CHIEF POWHATAN

Presents The

1-1/2" No. 250 Improved Industrial Fog Nozzle

Underwriters' Approved For Class A and B Fires

REDUCES Water Damage

DELIVERS a protective water curtain

Finger Tips Operation

Straight stream or wide range of fog

Economically Priced

Scientifically Machined

Powhatan – Since 1892 in the same location – has long been one of the largest producers of Industrial Fire Protection Items. When designing our No. 250 Fog Nozzle, we knew that in order to maintain our high standard of quality we must produce a nozzle better than any on the market. We fully believe we have accomplished this. Several large industrial plants and large utilities have approved our nozzle. It is regularly furnished in Satin Finish. Other finishes can be supplied.

POWHATAN BRASS and IRON WORKS
RANSON, WEST VIRGINIA
Phones 93 & 94 Charles Town, West Virginia
Established 1892

Firefly License Plate Signs

Five distinctive designs "Scotch Lited"

ALBANY FIRE DEPT.
PORT WASHINGTON FIRE DEPT.
CHELMSFORD FIRE DEPT.

PACIFIC REFLEX SIGNS
BOX 323
McMINNVILLE, OREGON

When a Moment Means a Life

REACH for—

PORTER TOOLS

When a life hangs in the balance; when a moment may save the destruction of property — whenever metal must be cut *in a hurry*, a PORTER CUTTER in your hands solves the problem . . . Q U I C K.

HC PORTER METAL CUTTER

The best and quickest method for cutting grills, bars, gratings, chains, etc. Highly tempered round cutting edges easily bite through hard chain and metals up to ½" diameter. Can also be used to make up tire chains for apparatus.

FC PORTER FIREMAN'S CUTTERS

Designed for use by firemen for cutting "hot" wires. Groping hook guides wire into cutter jaws. Cohardite insulated handles tested to 20,000 volts. Best tool for cutting aluminum doors and windows. No. OFC cuts up to 5/16" copper wire — No. IFC cuts up to 3/8" copper wire.

30LK PORTER LINKMASTER

A powerful tool for spreading and closing tire chain links up to 13/32" in diameter. Easiest method of repairing heavy tire chains. Dual jaws spread or close links. Every station should be equipped with this tool.

Write TODAY FOR FULL INFORMATION ON PORTER'S *NEW* HYDRAULIC POWERED RESCUE KITS, for releasing victims of falling buildings, auto wrecks, jammed elevators and all situations where speed is essential.

HKP

SEND FOR FREE CATALOG ON PORTER METAL CUTTERS

H. K. PORTER, INC. SOMERVILLE 43, MASS.

McINTIRE GATE VALVES

Fig. 164AN

4½" swivel female x two 2½" male Gated Siamese. Quick opening, ¼ turn valves.

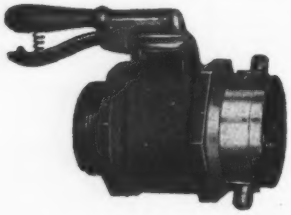


Fig. 163

Made either Right Hand or Left Hand 2½" male x female, gate valve.

F. N. McINTIRE BRASS WORKS

377 PUTNAM AVE., CAMBRIDGE 39, MASS.

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BUNKER SUITS

FOR COMFORT & PROTECTION

WE ARE DISTRIBUTORS FOR

SIREN BOOTS

We have been supplying **FIREMEN'S CLOTHING** for over 25 years.

Any fireman can have a catalog by writing—

BODY - GUARD MANUFACTURING CO.

ST. JOSEPH - - - MISSOURI

Philadelphia, Pa.—Orianna Metal Products Co. plant damaged.

Shenandoah, Pa.—Warehouse of Sorin, Inc., distributor and broker for rags and cloth for remanufacture, destroyed.

Florence, S. D.—High school building destroyed.

Centerville, Tenn.—O. H. Bernard High School and Elementary School destroyed. Defective heating equipment.

Memphis, Tenn.—Interior and contents of Curtis Drugstore destroyed. Electric motor in refrigeration unit.

Nashville, Tenn.—Rosedale Baptist Church destroyed. Overheated coal stove.

Dallas, Tex.—New dwelling at 7900 Greenville, as yet unoccupied, damaged.

Houston, Tex.—Main dining room of Alabama Cafeteria Service destroyed.

North Dallas, Tex.—Vacant Statler-Terrace Apartment buildings destroyed.

Abingdon, Va.—Walters Lumber Co. plant and Burley B. Tobacco Warehouse, destroyed.

Lynchburg, Va.—John E. Gannaway & Co., Inc.; Bailey-Spencer Hardware; S. S. Kresge Co.; W. T. Grant Co.; Brosch Florists; McKenna Radio & Television and Peoples Clothing Store in business district, destroyed.

South Boston, Va.—Building housing Glamour Shop, women's clothing store and adjoining building housing Lantor's store, damaged.

Kennewick, Wash.—Sherman Super Market damaged.

Kittitas, Wash.—Gilmour Grain Co. warehouse, farm products and machinery, destroyed.

Port Angeles, Wash.—Olympus Hotel building damaged. Faulty refrigeration unit.

Tacoma, Wash.—Columbia Powder contents damaged. Explosion.

Vancouver, Wash.—J. C. Willis Lumber Mfg. Co. destroyed. Explosion.

Appleton, Wis.—Buildings containing a television and radio store, music and record shop, drug store, physician's office and apartments, destroyed.

Green Bay, Wis.—Hank's Sport Shop, spread to Foster's Music Store and an adjoining building in downtown, damaged.

Fairbanks, Alaska—Alaska Airlines offices and equipment destroyed.

Flin Flon, Man.—Hotel and four other business establishments on May street, destroyed.

Barrie, Ont.—Klansmans Lodge, a summer resort at nearby Big Bay Point on Lake Simcoe, destroyed.

Toronto, Ont.—McKnight Building housing Dobkin Fur Co. and offices, damaged.

Berthierville, Que.—Chateau Berthelet, a hotel near this community, destroyed. Defective lighting tube.

Montreal, Que.—Apartment building at 6 Oldfield Place, destroyed.

Montreal, Que.—Business block of J. Corbell Drygoods Store destroyed.

Quebec, P. Q.—Roman Catholic monastery destroyed.

Sorel, Que.—Buildings in heart of business district of this St. Lawrence River ship building center, housing Vogue Lingerie Shop, Kitner Jewelry Shop, Roy's Billiard Hall, Dumont Restaurant, Lavallee Barber Shop, Galo's Men's Haberdashery, a linoleum store and Chinese restaurant, destroyed.

November Fire Losses

Estimated fire losses in the United States during November amounted to $68,784,000, the National Board of Fire Underwriters has reported.

According to Lewis A. Vincent, NBFU's general manager, this $68,784,000 loss represents an increase of 11.5 per cent over losses of $61,663,000 reported for November, 1954, and an increase of 17 per cent over losses of $58,778,000 for last October.

Losses for the first eleven months of 1955 now total $796,006,000, an increase of 1.1 per cent over the first eleven months of 1954, when they amounted to $787,103,000.

These estimated losses include an allowance for uninsured and unreported losses.

Manufacturers' News

Continued from page 47

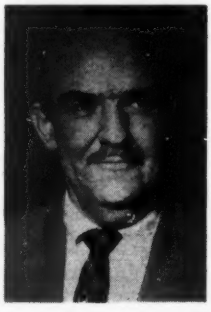
300 psi for good fog making and delivers 16 gallons per minute.

The new trucks were designed by Ben W. Hubbard of St. Clair Industries, who pioneered the development of the first in-plant fire trucks. Hubbard points out that industrial personnel concerned with plant fire protection have assisted greatly in the formulation of the basic requirements: fire-killing power, safety, maneuverability, simplicity of operation under emergency conditions, and dependability. Introduction of the St. Clair trucks is the result of a two-year research and development program.

Trucks are 10 feet long and 5 feet 8 inches high. Prices on the six basic units range from $4,453 to $4,878.

Acme-Hamilton Advances Varley

E. W. Smith, Vice President in Charge of Sales, Acme-Hamilton Manufacturing Corp., Trenton, N. J., has announced the appointment of W. C. Varley as Advertising, Public Relations and Merchandising Manager of the company. Mr. Varley brings to his new assignment a wide range of experience in industrial advertising and marketing.



Hannay Adds Plane To Speed Service

Clifford B. Hannay & Son, Inc., Westerlo, N. Y., manufacturers of Hannay Hose Reels, has purchased a new seven passenger, twin engine, Aero Commander to speed assistance in design and engineering to customers in all parts of the country.

For the past five years, the company

DOES YOUR FIRE TRUCK TANK SHOW RUST?

ARE YOUR FIRE PUMP GATES & VALVES HARD TO OPEN?

IF SO... HERE IS THE ANSWER

ONE HALF GALLON WILL TREAT 800 GALLON TANK, PUMP AND GATES

SINGLE GALLONS . . . . . $ 4.00
FOUR GALLON CASE . . . . $ 15.00
F.O.B. SIOUX FALLS, S. DAK.

DAKOTA TANK SAVER

Is the Cure All for your Fire Truck Maintenance Problems.

POSITIVELY PREVENTS RUST IN PUMP AND BOOSTER TANK * LUBRICATES VALVES AND GATES — PREVENTS STICKING * TESTED AND APPROVED BY HUNDREDS OF FIRE DEPARTMENTS * WILL NOT AFFECT WET WATER OR FOAM, WILL NOT DAMAGE FIRE HOSE OR FABRICS * JUST POUR IN BOOSTER TANK AND CIRCULATE

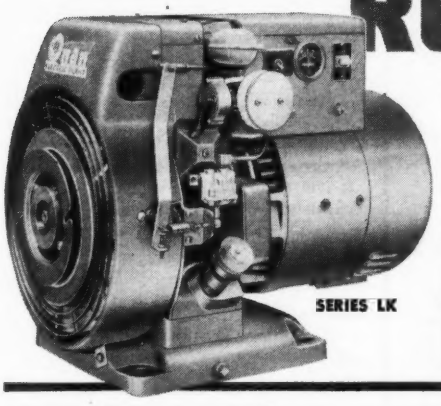
Order Direct from Manufacturer or Your Fire Equipment Dealer
Fire Equipment Dealers: Territories open for distribution—your inquiries invited

DAKOTA CHEMICAL COMPANY MANUFACTURED BY 213 West Tenth Street SIOUX FALLS, SOUTH DAKOTA

RUGGED

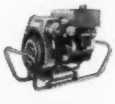
is the word for this

New ONAN 2,000-WATT ELECTRIC PLANT



SERIES LK

Put it to work on your toughest jobs!



PORTABLE POWER

Stands up under rough handling. Carry it, wheel it, or truck it.

PRIMARY POWER

Runs longer in continuous service. Dependable, economical.

Built to stand up where others can't! Powered by Onan 4-cycle, one-cylinder gasoline engine with Stellite-faced exhaust valve, longer-wearing bearings, efficient air-cooling. Onan all-climate generator is direct-connected. Compact, lightweight. Conservatively rated; economical operation. 115 or 230 volts, A.C. Recoil starter, electric starting, or automatic start and stop. Wide range of accessories. Other Onan models: 500 to 50,000 watts.

Write today for Special "LK" folder!

Onan ELECTRIC PLANTS

D. W. ONAN & SONS INC.

3016 UNIVERSITY AVE. S.E. • MINNEAPOLIS 14, MINNESOTA

Electric Siren Coder

Codes siren 4-5-8 times. (Actually from 1 to 8)

May be tripped by remote stations up to 2 miles from Fire Station over low voltage lines.
May be tripped by Automatic Fire Detectors.
Optional accessories automatically turn on Fire Station lights when alarm sounds.
May be used as master control for a local automatic Fire Detection System.

Prices start at $60.00

THE FAIRWOOD CO.
HANOVER CENTER, MASS.

Morning Pride

"SCOTCHLITE"
REFLECTIVE FABRIC

SAFETY CONDITIONED FOR YOUR PROTECTION • "SCOTCHLITE" IS AVAILABLE ON ALL TYPES OF COATS.

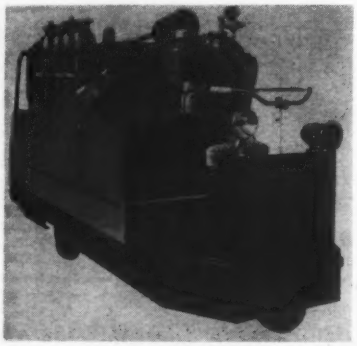
Free Literature On Request

See Your Local Dealer or Write
MORNING PRIDE MFG. CO.
1986 HOME AVE., DAYTON 7, OHIO

has owned two other planes and employed a full time pilot to transport sales engineers and technicians. Dwight C. Hannay, himself a pilot, believes the new plane will enable the company to better serve individual requirements in more widely separate areas on short notice.

Mr. Hannay pointed out that the company is in particular need of air transportation, because, in addition to producing a standard line of over 1000 different reels, it designs hose reels for custom installations of all types of fire fighting and petroleum delivery trucks, and in industrial plants. Hence it is often necessary to fly technicians right to the installation site as swiftly as possible.

Seco "In-Plant" Fire Truck



A new model "in-plant" fire truck that features four major fire fighting guns has been announced by Seco Engineering and Manufacturing Division of 1300 W. Fort Street, Detroit 26, Mich. Designated as the S-556 Model, the new truck carries carbon dioxide, dry chemical, water and foam.

This model makes available large volumes of extinguishing agents at any part of an industrial plant in seconds as the truck has a speed of 15 miles per hour. It has a turning radius of 96 inches, is 50 inches wide and 68 inches high.

A 15 cubic foot accessory cabinet is included as well as a ladder cabinet for an extension ladder. Hose lines (100-foot) for water fog and carbon dioxide are standard equipment.

A catalog illustrating and describing all models of the Seco "In-Plant" Fire Truck is available upon request.

New Additive Prevents Rust, and Lubricates Pump

A new oil, soluble in water which, the manufacturer states, eliminates the problem of rusting booster tanks and sticking pump valves on fire trucks, has been developed by the Dakota Chemical Company of Sioux Falls, S. D. This new product, called "Dakota Tank Saver and Lubricant" has been lauded by the fire departments using it as a solution for fire department equipment maintenance problems. The solution is added to the booster tank and circulated through lines and pump. It mixes with water and a few minutes of circulating is sufficient to coat

when heat is intense

Use ISSCO's heat-reflecting aluminized asbestos hood and gloves. Gives you that extra protection around face and hands in approaching fire and in flash-backs. Hood has built-in helmet—adjustable to size: ¼" laminated safety glass window.
Gloves shown are ISSCO 114-AL (One of many styles we furnish).

Write for literature describing aluminized asbestos protective clothing.

INDUSTRIAL SAFETY SPECIALTIES COMPANY
8th and Chestnut Sts., Perkasie, Pennsylvania
Manufacturers of
The ISSCO Aluminized Asbestos Turnout Coats
Asbestos blankets in all sizes
Protective clothing for every situation!

The Fireman's Choice

Powerful Light
When he needs it—where he needs it
Big Beam
PORTABLE ELECTRIC HAND LAMPS

Model 700-A 2000-foot beam
Most powerful, heavy-duty hand lamp of its size. Adjustable 6-inch head. Operates on four standard No. 6 dry cells.

Model 211 1500-foot beam
Popular price, light weight, easy to carry. Adjustable 5-inch head. Holds two standard 6-volt lantern batteries. Operates on one; other is a spare.

Write for folder on complete information on these and other Big Beam dry-cell and storage-battery models.

U-C LITE MANUFACTURING CO.
1041 West Hubbard St., Chicago 22, Illinois
In Canada: Bernard Marks & Co., Ltd.,
70 Claremont St., Toronto 3, Ontario

tank, lines and pump with a film of rust preventive oil. The manufacturer recommends that one-half gallon of "Dakota Tank Saver and Lubricant" be used for a 350-500 gallon booster tank. The solution is left in the booster tank until the fire truck is used and new solution added after the unit is brought back to the station.

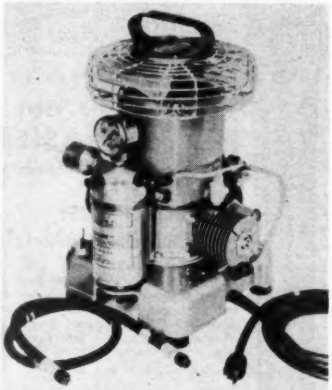
According to the manufacturer, the additive will remove corrosion and lime deposits from valves such as transfer, relief and gate valves. The manufacturer also states that it will not affect wet water or foam and will not damage fire hose or fabrics. For information write the Dakota Chemical Company, 213 West Tenth Street, Sioux Falls, S. D.

Lehneis Joins Buffalo

Charles J. Lehneis, Jr., has been appointed District Manager for the Buffalo Fire Appliance Corporation, Dayton, Ohio. His area will cover Pennsylvania, Maryland, Delaware and the District of Columbia.

Mr. Lehneis, who resides in Wilmington, Dela., has had wide experience in the industrial selling field and was a former service man.

New Air Compressor for Fire Departments



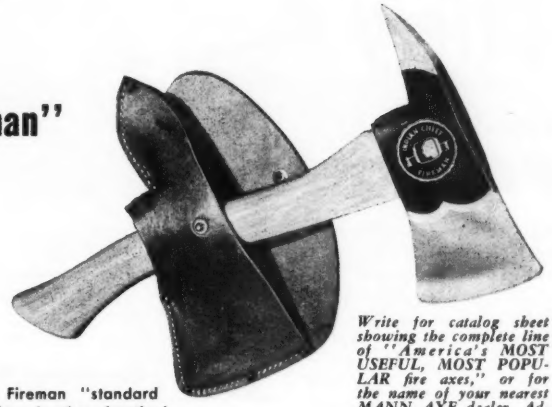
Fire departments using air demand type breathing equipment for fire fighting and rescue will be interested in the new lightweight compressor being manufactured by the Cornelius Company.

It is light in weight, weighing only 38

"Safety First" . . . and FAST!

MANN'S

"Little Fireman"



You'll make your Little Fireman "standard equipment" for fire fighting. Leather-sheathed for safety, you can strap it on for instant readiness. 1½ lbs. of precision-balanced help when you're in close quarters where every second counts. Full polished head is finished in Indian Chief Red with gold trim; finest quality 15-inch white hickory handle. A precision tool in the highest MANN tradition of fifth-generation craftsmanship.

Write for catalog sheet showing the complete line of "America's MOST USEFUL, MOST POPULAR fire axes," or for the name of your nearest MANN AXE dealer. Address Dept. 554.

MANN EDGE TOOL CO., Lewistown, Pa.

. . . making America's finest quality axes since 1843

Better Hose Care-with CIRCUL-AIR HOSE CONDITIONING EQUIPMENT

WASHERS • DRYERS • TURN-TABLES • STORAGE RACKS

FIRE HOSE DRYER

The patented, electrically operated Circul-Air hose dryer circulates pre-warmed fresh air through loosely coiled hose at the rate of 5 to 6 air changes per minute. Saves floor space, hard work and lengthens hose life! No other drying method is so fast—so economical—so easy to use.

LABORATORIES APPROVED

USED IN OVER 3,000 LEADING FIRE DEPARTMENTS

ROTO-JET FIRE HOSE WASHER

Washes, Rinses, Drains hose thoroughly and quickly. Hose is self-propelled. Simple one man operation. With or without detergents ashes, dirt, mud and sludge are automatically scrubbed out and flushed away.

WRITE FOR NEW FOLDER

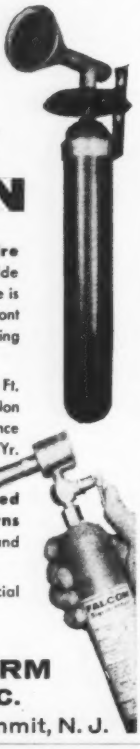
If you are planning to build or remodel, send for our brochure "Fire Station Design."

THE CIRCUL-AIR CORPORATION 575 EAST MILWAUKEE DETROIT 2, MICHIGAN

Sounds for *Safety*

engineered by

FALCON



New Falcon Automatic Fire Detectors and Alarms provide constant protection wherever fire is a hazard. Self-powered by DuPont "Freon", they give early warning at first sign of fire.

U. L. Approved for 20 Ft. Spacing—Low Cost—Non Electric—Easy Maintenance —Easily Installed—30 Yr. Guarantee.

Falcon manually operated Emergency Signaling Horns are portable, self-contained and "Freon" powered.

Many types and sizes. Special designs for special uses.

Write for details—

FALCON ALARM COMPANY, INC.

243 Broad St., Summit, N. J.

WHY *Janesville* IS FIRST

IT FEATURES SAFETY FIRST

because it's . . .

"SAFETY CONDITIONED"

with

"SCOTCHLITE"

JANESVILLE fire coats, either duck or rubber, are available fully "SAFETY CONDITIONED" with properly placed "SCOTCHLITE" trim that will reflect light with dazzling brilliance on dark streets or in smoke-filled buildings.

"SCOTCHLITE" bands extend around cuffs and bottom of coat in addition to vertical strip on front flap and a horizontal band across the back.

FREE literature upon request.

Janesville APPAREL CO.

JANESVILLE, WISCONSIN

pounds and is compact in design. The portable unit operates on 110-220 volt 60 cycle current. Operation is simple and air cylinder can be recharged as quickly as 6½ minutes, depending upon the size of the cylinder.

Here are a few other details: It has a capacity of 1.75 cubic feet per minute of free air; rated discharge pressure of 3000 psi; overall height of 17 inches. Complete assembly includes compressor, oil filter and moisture separator, self resealing valve; 0-4000 psi pressure gauge and an integral 110-220 volt 60 cycle A.C. electric motor. Compressor and motor are air cooled. Carrying handle is located on top of the fan guard.

For further information on this newest model, address the Cornelius Company, 550-39th Avenue, N.E., Minneapolis 21, Minn.

Glazebrook Retires from Fabric

The Fabric Fire Hose Company announces the retirement of William H. Glazebrook, District Manager for the Company in Indiana for the past twenty-two years.

States the announcement, "Mr. Glazebrook, who joined Fabric in 1934, established an outstanding sales record in the middle western states and is retiring at the peak of his career as a Fabric salesman and nationally known fire equipment distributor."

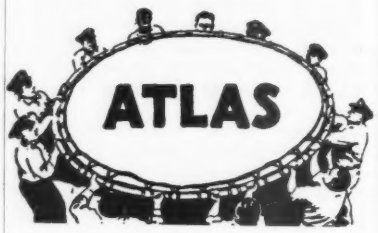
George R. Koorsen of the Indiana Fire Prevention Company, 545 East Street, Indianapolis, Ind., has been appointed Fabric District Manager for the State of Indiana to succeed Mr. Glazebrook.

Eureka Moves Office

The Eureka Fire Hose Division, U. S. Rubber Company, has moved its main office from 195 Hudson Street, New York City to new quarters at the company's factory at 1 Market Street, Passaic, N. J., according to an announcement by Jonas Smith, Sales Manager.

The move was made on January 3.

always **SPECIFY**



the world's best

LIFE NET

in use in thousands of departments—time tried and proven—as the best and fastest means of rescue. Patented self-locking hinges and shock absorbers.

Specify ATLAS LIFE NETS on all new apparatus!

ATLAS SAFETY EQUIPMENT CO., INC.

27 WARREN ST., NEW YORK 7, N. Y.

16" Handle

New RATCHET HYDRANT WRENCH

REQUIRES ONLY 4" SWING!

Opens any Hydrant or Gated Hydrant FASTER—EASIER

in a matter of seconds.

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FIREMEN PRAISE New Ratchet Principle

"It's the fastest, most convenient Wrench ever devised"—"The short 4" swing is wonderful to get into hard-to-reach places." "Your new Ratchet Wrench has been a life saver on many occasions."

• • •

Pentagon heads obtainable in following sizes—1¼"—1½"—1¾"—2", all adjustable down to one inch.

Send in your order today. Money back guarantee.

THE S-T HYDRANT WRENCH CO.

P. O. Box 921 HOLYOKE, MASS.

Specify **ACME**

. . . the Gas Mask that Gives You MAXIMUM *USABLE* VISION

Tests prove that ACME gas masks lead the field in giving you clear, undistorted vision — up, down, and to either side. Along with maximum usable vision, you get greater comfort, less fogging, minimum breathing resistance, acceptable conversation transmission —all at down-to-earth prices.

Write for Bulletins No. 501 on gas masks and No. 561 on results of vision tests.

ACME PROTECTION EQUIPMENT COMPANY
1215 Kalamazoo St.,
South Haven, Mich.

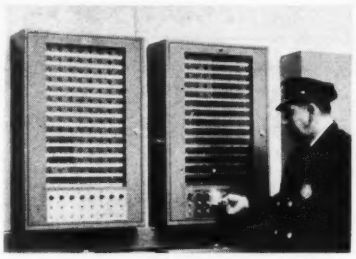
BADGES

As fine a badge As money can buy

wide selection to choose from —prompt service—satisfaction guaranteed. Write for folder.

EVERSON-ROSS
88 CHAMBERS ST.
NEW YORK 7, N. Y.

ADT Installs Record Breaking Aero System



One of the largest Aero Automatic Fire Alarm installations ever made for the protection of office buildings will be completed during 1956, when The Travelers Insurance Companies take occupancy of their new 740 Main Street Building, the latest addition to the main building-group in the downtown section of Hartford.

Aero protection extends throughout all of the five buildings in the main group, from basement areas to the top of the famous Travelers Tower, long a Connecticut landmark. There are 211 Aero circuits, requiring approximately 36 miles of copper tubing, one-twelfth inch in diameter. If a fire occurs, a signal is automatically transmitted to the fire department through the ADT Central Station, and the fire area is indicated on one of two 150-drop annunciator panels in the protection room on the first floor at 700 Main Street.

New Britain Fire Fighters Raise Funds for Research

Man's fight against lukemia was enriched by $6,000 on Dec. 5, because firemen in New Britain, Conn., have never forgotten a four-year-old boy killed by the disease.

Three years ago the firemen began to raise money in an effort to cheer little Tommy Mozdsierz, of New Britain, during the waning days of his life. But Tommy died soon after the fund drive began. Nevertheless, the firemen continued to raise money for the "Tommy Fund" to support research on lukemia, a cancer of the blood.

Inspired by the memory of Tommy, the New Britain firemen organized fire fighters in other cities in Connecticut as fund-raisers. News of the "Tommy Fund" spread. Soon contributions were coming in from individuals and organizations throughout the nation.

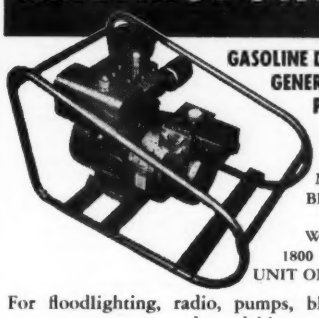
In December, 1953, eleven months after Tommy died, the firemen presented $8,000 to the Yale School of Medicine for lukemia research. But the drive never stopped. On Dec. 5, last, a new grant was made to Yale.

The latest gift, like the first, was turned over to Dr. Milton J. E. Senn, and Dr. David H. Clement, both specialists in the field of lukemia research and treatment.

New Britain firemen, meanwhile, say the "Tommy Fund" will continue until it becomes unnecessary.

Tom Magner

PIONEER
GEN-E-MOTOR
PORTABLE ELECTRIC POWER



GASOLINE DRIVEN GENERATING PLANTS

MODEL BHA 15L LIGHT WEIGHT 1800 WATT UNIT ON SKID

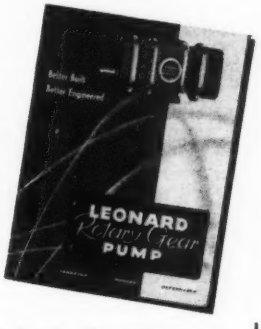
For floodlighting, radio, pumps, blowers, rescue apparatus . . . dependable emergency power *when and where you need it* with Pioneer, light weight portable generators.

Pioneer generators require little space, are ruggedly constructed. Models **BHA-20L,** 2300 Watts, and **WHA-25L,** 2800 Watts, skid mounted as above for easy handling.

WRITE TODAY for new catalog and prices on 250 to 3600 watt units designed for Fire Department use.

PIONEER Gen-E-Motor Corporation
5832 West Dickens Ave., Chicago 39, Illinois

Be Informed . . .
New Booklet Describes
How LEONARD *Rotary Gear* PUMP Saves You Money Year After Year



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Please rush me my free copy of new booklet describing the improved Leonard Pump.

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FOR SALE—DEMONSTRATOR

1956 Willys Special Heavy-Duty Champion 4 Wheel Drive Fire Truck, with Cab & Chassis, rated at 8000 pounds G. V. W. with heater and defroster; the same is equipped with the following: 500 G.P.M. front mount frost proof pump, Underwriters Approved, 200 gallon booster tank, one reel with 150 feet of hose and nozzle, axe, pike pole, crew bar, extension ladder, roof ladder, two lengths of suction hose, heat exchanger, siren, 360° roof lights, two hose lights, hand lantern, four large compartments, and a hose bed for a 1000 feet of 2½" Dacron hose.

WILL GO PLACES AND DO THINGS THAT NO OTHER FIRE TRUCK CAN DO.

Priced at $5200 F. O. B.

VALLEY FIRE TRUCK CO.
59 Tuscola Road
Bay City, Michigan

AMBULANCES—FOR SALE

1953 Cadillac Miller Ambulance	$4250.00
1950 Cadillac Superior Ambulance	$2150.00
1948 Cadillac Superior Ambulance	850.00
1948 Pontiac Superior Ambulance	650.00
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Will send photos to interested persons.

FINANCING AVAILABLE
Box 270, c/o Fire Engineering
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FOR SALE

New Darley Champion Pumps—Front End Fog Nozzles 1½". Gasoline Driven Generators.

THOMSON SURPLUS
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BARGAINS—USED SIRENS

All types of used automotive sirens (6 and 12 Volts) which have been factory reconditioned. Guaranteed for one year . . . For information write:

EDWIN R. JENNY SIREN COMPANY
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2½" FIRE HOSE SALE

SPECIAL OFFER

Unused, clean, factory packed 2½"x50' SJ CRL fire hose, leading brands, guaranteed perfect, tested to 300 lbs.

ONLY $.55 Ft. cpld.

TOWSON HOSE & RUBBER CO.
104 WEST JOPPA ROAD
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UNUSED SURPLUS

1½"x50' SJ CRL fire hose, unused but soiled	$. 26 ft. cpld.
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UNUSED & CLEAN FACTORY PACKED, GUARANTEED PERFECT

1½"x50' SJ CRL fire hose	$. 40 ft. cpld.
2½"x10' hard suction hose	14.50 lg. cpld.
¾" or 1"x50' Booster hose	.30 ft. cpld.
4"x16' DJ soft suction hose, w/4½", cplgs. male & long handle female	16.50 lg. cpld.
Mechanical foam playpipes, Phomaire, less pickup tube (Worth $45.00)	8.00 ea.
Mechanical foam playpipes, Phomaire, complete with pickup tube (Worth $55.00). Our price only	15.00 ea.
2½" Siamese connections, plain, 1 male and 2 female, NST	4.75 ea.
2½" Brass double female connections, NST	5.95 ea.
1½"x12" Plain hose nozzles, brass, IPT	1.25 ea.
2½"x15" Plain hose nozzles, brass NST	4.25 ea.
1½" Fog nozzles, brass, 3 position, leading brands, NST or IPT	29.50 ea.

IMMEDIATE DELIVERY
ANY THREAD COUPLING CAN BE SUPPLIED ON HOSE LISTED

TOWSON HOSE & RUBBER CO.
104 WEST JOPPA ROAD
BALTIMORE 4, MD.
Phone VAlley 3-1672

FOR SALE

1933 Peter Pirsch combination pumper 750 GPM. Booster tank and hose, ladders, extinguishers, 5" hard suction and soft suction. Indian tanks, and auxiliary equipment. Good condition. May be seen anytime by appointment.

NANUET FIRE ENGINE CO. #1 INC.
PROSPECT STREET
NANUET, N. Y.

SELL FIRE ALARMS

We have the finest home and commercial FIRE ALARM SYSTEMS available today. You can start your own profitable business selling a product everyone needs and wants. Complete alarm demonstrators available for your use. For full information write:

FIRE-LITE ALARMS, INC.
192 FULTON TERRACE
NEW HAVEN 2, CONN.

AMAZING NEW

device that holds firmly, 2½ gal. foam and S & A extinguishers while removing and replacing caps. Makes recharging a simple, one man job. Save time and temper by using this new extinguisher holder! Used successfully by firemen in military installations, industrial plants and in city fire depts. Unconditional money-back guarantee. Order now! $3.00 each or 2 for $5.00.

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P. O. BOX 1351
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UNUSED

7-American LaFrance 12 cylinder engines with 4 stage volute fire pump—High Pressure.

"Priced to Sell"

BRAZOS ENGINEERING CO., INC.
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New type "Javelin" Fire Nozzle for hard to get at places. Manufacturers Agents and Salesmen wanted all territories. A terrific sideline. Product well recommended by Industry and Fire Departments.

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APPARATUS AND EQUIPMENT AGENTS and DEALERS

Well established, progressive Midwest Manufacturer has territories available—good deliveries, immediate settlements—write:

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FOR SALE

1940 Sealand Utility Auxiliary truck—200 GPM. generator, and flood lights, cabinets. 150 gal. booster tank and hose, 2½ hard suction, extension ladder, misc. equipment. Excellent condition. May be seen any time by appointment.

NANUET FIRE ENGINE CO. #1 INC.
PROSPECT STREET
NANUET, N. Y.

FOR SALE

1946 MODEL FIRE ENGINE 1½-ton Chevrolet with Hi-Pressure Hardie pump. 500 gal. booster tank. Two reels. Fully equipped. 3000 miles. Perfect. Must make room for new equipment.

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1941 American La-France Hook and Ladder Truck. Double bank of ladders, from 50' and 40' extension ladders to 12' Roof ladder; 8 cyl. LaFrance engine; good condition; paint good. Can be inspected and demonstrated at any time. Write

WESTBURY FIRE DISTRICT
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BUSINESS OPPORTUNITY

Establish your own Notifier sales and service organization. Permanent income assured with risks protected by Notifier automatic fire alarms or sprinkler supervision carried direct to Fire Department or Central Station. For complete details write:

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WANTED: Fire Apparatus Dealers or Sales Representatives

The Four Wheel Drive Auto Company, Builders of America's Finest and Most Dependable Fire Fighting Apparatus has a limited number of choice territories available for aggressive fire apparatus dealers or manufacturers' agents experienced in selling fire fighting equipment.

Opportunity—

Proven ability of FWD to out-perform all other types of fire engines make it one of the most salable pieces of fire fighting equipment on the market today. Your selling efforts with FWD will be backed by a highly effective lease purchase plan, sales demonstrators, dramatic movies and a complete line of sales literature.

Reply—

For complete details, write C. H. Welch, Manager, Fire Apparatus Division, The Four Wheel Drive Auto Company, Clintonville, Wisconsin.

ROBERT P. MORAN
ASSOCIATES

Specializing in

FIRE STATION
PLANNING

ENGINEERS
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STUDIES • REPORTS
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No Obligation for Initial Conference in Your City

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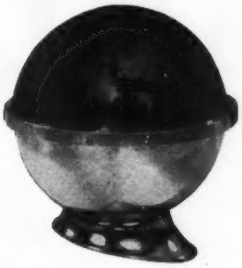
NEW YORK 7, N. Y.
WOrth 2-7839

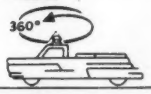
THE COVER STORY

Smoke rolls up along the walls of Tokyo's large Daimaru department store, but there is no fire, actually. It's all part of a drill staged to mark the opening of Japan's Fire Prevention Week. Interspersed between the extension ladders are a number of canvas fire escape chutes for people to slide down to safety.

Sensational! New! 360° REVOLVING LIGHT



★ FREEZE-PROOF
★ WATER-PROOF
★ FADE-PROOF
★ TROUBLE-PROOF
★ EASY TO INSTALL OR REMOVE
★ MADE LIKE A FINE WATCH
★ BUILT FOR YEARS OF SERVICE



TRIPPE HI-BALL

Ultimate in a warning light! Flip the switch and instantly the parabolic mirror begins to rotate around the 100 candlepower bulb at 60 TIMES A MINUTE. Flash is so intense not only at great distances, but close by, that all traffic is immediately alerted. 9½" diameter. Heavy chrome. Stands full 11" above the roof. A beauty —and price is LOW!

Write or Wire for Beautiful Catalog or Call Your Jobber

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N-R-N-R-N-R-N-R

NIELSEN-RIONDA
Present their Exclusive
FLAT BACK BADGES

Unmatched Beauty
Greater Durability

Among their features—Coat and Cap attachments, center emblems and numbers are GUARANTEED for a period of 10 years of normal wear against separating from Badge body.

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Send for our new 32 page catalog at no charge that illustrates the complete Nielsen-Rionda line of fire badges.

•

Dealer inquiries invited. Write to Department FE

NIELSEN • RIONDA INC.
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OVERHAUL AND SALVAGE

Continued from page 41

that is thrown into the building; every window pane that is broken in the fire control operations, every draft of smoke that carries fumes and ashes to exposures, all these concern him as a salvageman more than they rate with him as a fire fighter.

Training and Experience the Prerequisites for Salvagemen

All this extra knowledge which the fire fighter-salvageman must possess if he is to be efficient in both pursuits, can only come through training and experience. In the large fire department, the firsthand experience may not be as hard to come by as it will be in the smaller department, where "runs and workers" are fewer and of less consequence.

If training, therefore, is essential to the fire fighter, it is even more so to the fireman who must double-in-salvage.

It is hoped to discuss the training phase of salvage work in subsequent issues.

FIRE and POLICE UNIFORMS and ACCESSORIES

Send for our latest Catalogues, Circulars and Samples of Materials

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NEW YORK

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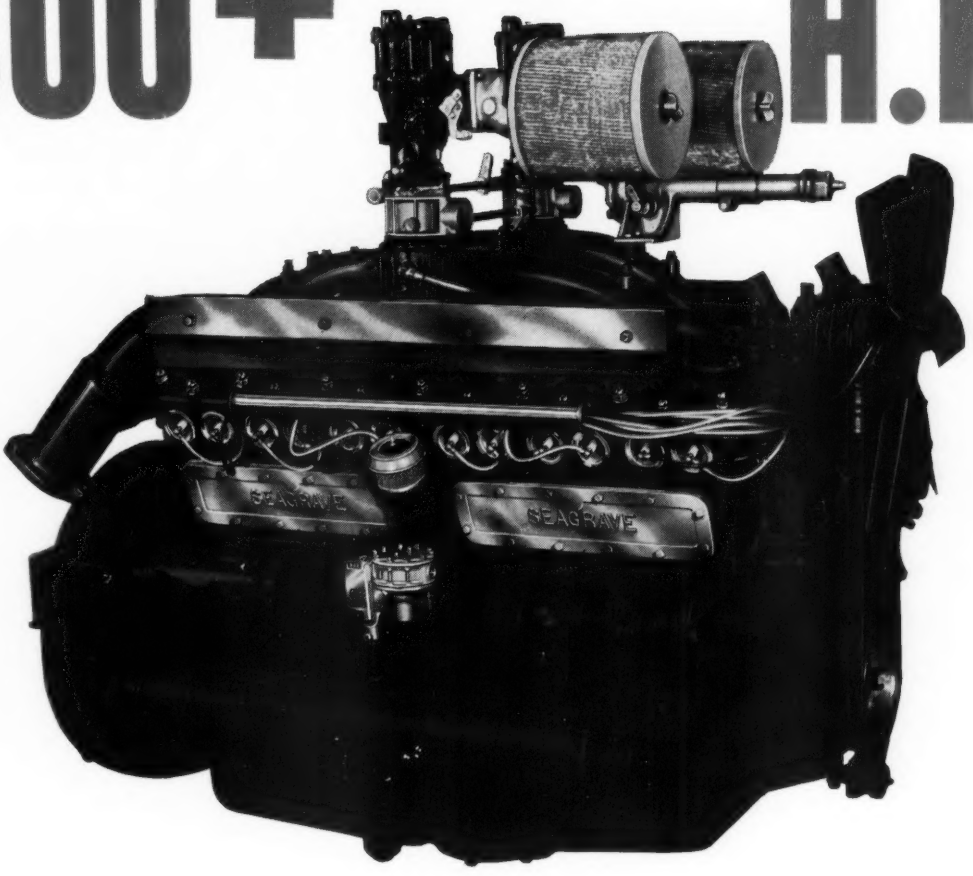

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